



SOUTH DAKOTA RETIREMENT SYSTEM

COMPREHENSIVE ANNUAL FINANCIAL REPORT

A Pension Trust Fund of the State of South Dakota
for the Fiscal Year Ended June 30, 2019

FISCAL YEAR 2019 HIGHLIGHTS

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Total membership	89,685
Active contributing members	41,500
Inactive non-contributing members	18,989
Benefit recipients	29,196
Actuarial value of assets	\$ 12,472,799,657
Actuarial accrued liability (AAL)	\$ 12,461,820,956
Total pension liability	\$12,462,202,396
Net position restricted for pension benefits	\$12,472,799,657
Net pension liability/(asset)	\$ (10,597,261)
Investment return—Gross of fees	5.32%
Investment return—Net of fees	4.88%
<u>Benefits and refunds paid</u>	
Benefits paid	\$ 572,351,398
Refunds paid	<u>24,073,325</u>
Total	\$ 596,424,723
<u>Contributions</u>	
Member	\$ 127,454,956
Employer	<u>127,572,348</u>
Total	\$ 255,027,304
Funding period	N/A
Actuarial value funded ratio (actuarial value of assets/AAL)	100.1%
Fair value funded ratio (fair value of assets/AAL)	100.1%



SOUTH DAKOTA RETIREMENT SYSTEM

COMPREHENSIVE ANNUAL FINANCIAL REPORT

A Pension Trust Fund of the State of South Dakota
for the Fiscal Year Ended June 30, 2019

Prepared by the SDRS Finance and Audit Departments

South Dakota Retirement System
222 East Capitol, Suite 8, P.O. Box 1098
Pierre, South Dakota 57501-1098

SDRS MISSION STATEMENT

To plan, implement, manage, and efficiently administer financially sustainable retirement income programs within the fixed resources

available in accordance with fiduciary responsibilities and sound public policies.

SDRS VISION

Provide members and their families the opportunity to achieve financial security at retirement, death, or disability by delivering

appropriate and equitable lifetime benefits, and promote, encourage, and facilitate additional member savings for retirement.

SDRS LONG-TERM INCOME REPLACEMENT GOALS

Provide lifetime income replacement of at least 55 percent of final average compensation for career employees with a cost of living adjustment during retirement that provides partial inflation protection.

Encourage members to establish an individualized lifetime retirement income goal that will enable them to maintain their standard of living in retirement. This will typically require lifetime income replacement of at least 85 percent of final average compensation (with at least partial inflation protection during retirement), including income from SDRS, Social Security, and personal retirement savings of at least one year's compensation at retirement.

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CERTIFICATE OF ACHIEVEMENT



Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

South Dakota Retirement System

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2018

Christopher P. Morill

Executive Director/CEO

PUBLIC PENSION STANDARDS AWARD



Public Pension Coordinating Council

***Public Pension Standards Award
For Funding and Administration
2019***

Presented to

South Dakota Retirement System

In recognition of meeting professional standards for
plan funding and administration as
set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

A handwritten signature in black ink, reading 'Alan H. Winkle'.

Alan H. Winkle
Program Administrator

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intentionally
left blank.**

INTRODUCTION



**Letter of Transmittal
Board of Trustees
Organizational Chart**

LETTER OF TRANSMITTAL

South Dakota Retirement System
222 East Capitol Suite 8
PO Box 1098
Pierre, South Dakota 57501-1098
Toll-Free (888) 605-SDRS
Telephone (605) 773-3731
Fax (605) 773-3949
www.sdrs.sd.gov



South Dakota Retirement System

December 18, 2019

Board of Trustees
South Dakota Retirement System
Pierre, SD 57501

To the Members of the SDRS Board of Trustees:

We are pleased to submit the Comprehensive Annual Financial Report of the South Dakota Retirement System (SDRS) for the fiscal year ended June 30, 2019. Responsibility for both the accuracy of the data and the completeness and fairness of the presentation, including all disclosures, rests with SDRS. To the best of our knowledge and belief, the enclosed data is accurate in all material respects and is reported in a manner designed to present fairly the financial position and results of SDRS' operations.

Plan Basics

SDRS was established July 1, 1974, as a multiple employer public employee retirement system. The plan provides retirement, disability, and survivor benefits to nearly 90,000 members. SDRS is managed within the resources provided by fixed, statutory member and employer contribution rates. This contribution budget has led to the disciplined management of the plan structure that includes variable benefits and statutory funding thresholds requiring corrective actions. This proactive discipline, together with outstanding historical investment performance, has consistently resulted in SDRS being fully funded—a rare achievement among retirement systems. The system's history of changes in basic plan provisions is shown on pages 13-16.

Investments

The SDRS trust fund is managed by the South Dakota Investment Council. The most important overall objective of the Investment Council is to prudently manage the SDRS assets to achieve and exceed the returns that the broad capital markets provide over the long term.

The money-weighted investment return for the SDRS trust fund net of investment expenses was 4.84 percent. The total time-weighted investment return net of investment expenses for the SDRS trust fund was 4.88 percent for fiscal year (FY) 2019. The Investment Council's benchmark return was 7.91 percent for the same period. Additional information can be found starting on page 81.

Funding and Actuarial Measures

The most important measures of a retirement system's sustainability include the funded ratio and the adequacy of contributions to pay for the system's future benefits. The funded ratio is the ratio of system assets to the system's actuarial accrued liability. Contribution adequacy is judged by comparing actual contributions to the contributions required to fund the ongoing benefit cost of the system plus an amortization of any unfunded actuarial accrued liability, the excess of the system's actuarial accrued liability over the actuarial value of assets.

The June 30, 2019 actuarial valuation confirms SDRS' fair value funded ratio is 100.1 percent, SDRS has no unfunded actuarial accrued liability, and the fixed, statutory contribution rates are adequate to fund the ongoing benefit costs. As of June 30, 2019, SDRS meets the Board of

Trustees' funding objectives:

- A fair value funded ratio of at least 100 percent,
- A fully funded system with no unfunded actuarial accrued liabilities, and
- Actuarially determined variable benefits that are adequately funded by the fixed, statutory contributions.

SDRS is funded by fixed, statutory member and employer contribution rates and is managed by the SDRS Board of Trustees within the resources provided by those fixed contributions through benefit features that vary based on investment returns and affordability (primarily the SDRS COLA). This benefit structure, the Board's funding objectives, and supporting initiatives of the Board have resulted in a sustainable and fully-funded system that is rare among similar systems.

The June 30, 2019 actuarial valuation also establishes the COLA payable beginning July 1, 2020. When the actuarial measures indicate the full COLA range is affordable, the SDRS COLA is equal to inflation, no less than 0.5 percent and no greater than 3.5 percent. When the full COLA range is unaffordable, the maximum COLA is restricted to the percentage increase that if paid in all future years, results in a fair value funded ratio of at least 100 percent. The June 30, 2019 actuarial valuation indicates the full COLA range is unaffordable and a maximum COLA of 1.88 percent, if paid in all future years, results in a fair value funded ratio of at least 100 percent. The July 2020 SDRS COLA will therefore be inflation between 0.5 percent and 1.88 percent. Inflation for the year was 1.56 percent, making the July 2020 SDRS COLA 1.56 percent. This meets the Board's long-term benefit objective of providing a COLA that equals inflation in times of moderate inflation.

If future experience matches the actuarial assumptions, the affordable SDRS COLA is expected to remain at 1.88 percent and SDRS is expected to remain fully funded.

Major Initiatives

SDRS staff continues to focus its efforts on outreach programs to educate members about the important benefit base provided by SDRS, the many challenges retirees face, and ways to extend and enhance financial security throughout retirement. During fiscal year 2019, SDRS retirement planners met with over 6,000 members in one-on-one counseling sessions, group events, and requested visits throughout the state.

Communication is also a priority for SDRS. SDRS continues to maintain a Facebook page to engage members through social media. While our newsletters and website continue to be the main sources for the most current SDRS information, these avenues provide additional methods of communication to our membership.

Personal retirement savings is a vital component of each individual's retirement plan. SDRS continues to bring awareness about the importance of personal retirement savings. Building additional resources can help fund retirement goals and provide added financial security during retirement. SDRS members are encouraged to save through the SDRS Supplemental Retirement Plan (SRP) or any choice of other retirement savings programs.

Accounting System and Internal Control

This report has been prepared to conform to the reporting standards of the Governmental Accounting Standards Board and the American Institute of Certified Public Accountants. The accrual basis of accounting is used to record assets, liabilities, revenues, and expenses. Revenues are recognized in the accounting period in which they are earned, without regard to the date of collection, and expenses are recorded when the corresponding liabilities are incurred, regardless of when payment is made. Administrative expenditure authority is granted annually by the South Dakota Legislature.

The system's internal accounting controls, which are reviewed by external auditors on an annual basis, are designed to provide reasonable assurance regarding the safekeeping of assets and the reliability of financial records. The concept of reasonable assurance is based on the assumption that the cost of internal accounting controls should not exceed the benefits expected to be derived from the implementation.

This letter of transmittal is designed to complement the Management's Discussion and Analysis (MD&A) and should be read in conjunction with it. The SDRS MD&A can be found immediately following the Auditor's Opinion.

Professional Services

The Board of Trustees retains independent consultants to perform professional services that are essential to the system's effective and efficient operation. External actuarial services are provided by Cavanaugh MacDonald Consulting, LLC. The annual financial audit is conducted by the accounting firm of Eide Bailly with the participation of the South Dakota Department of Legislative Audit. SDRS investments are managed by the South Dakota Investment Council.

Certificate of Achievement/Public Pension Standards Award

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the South Dakota Retirement System for its comprehensive annual financial report for the fiscal year ended June 30, 2018. The Certificate of Achievement is a prestigious national award recognizing conformance with the highest standards for preparation of state and local government financial reports.

In order to be awarded a Certificate of Achievement, a governmental unit must publish an easily readable and efficiently organized comprehensive annual financial report, whose contents conform to program standards. Such financial report must satisfy both generally accepted accounting principles and applicable legal requirements.

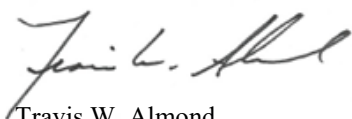
A Certificate of Achievement is valid for a period of one year only. This is the 24th year that SDRS has received a Certificate of Achievement. We believe our current report continues to conform to the Certificate of Achievement program requirements, and we are submitting it to the GFOA to determine its eligibility for another certificate.

The Public Pension Coordinating Council awarded the Public Pension Standards Award for Funding and Administration to the South Dakota Retirement System in recognition of meeting the professional standards for plan design and administration. This is the 16th year that SDRS received an award from the Public Pension Coordinating Council.

Acknowledgments and Comments

The preparation of this report reflects the combined efforts of the SDRS staff under the direction of the Board of Trustees with support from South Dakota Investment Council staff. It is intended to provide complete and reliable information to members of SDRS, the Governor, the South Dakota State Legislature, and the citizens of South Dakota.

Respectfully submitted,



Travis W. Almond
Executive Director



Jahe Beer
Chief Financial Officer

Foundation Member History of Changes in Basic Plan Provisions

Provision	Status in 1974	Benefit Improvements
Benefit Formula * Class A Standard	1.0%	1982 - 1.1% 1986 - 1.2% 1989 - 1.25% 1991 - 1.30% 1994 - 1.30%/1.40% (for applicable years) 1997 - 1.40% prior to 1997/1.30% thereafter 1998 - 1.475% prior to 1998/1.30% thereafter 1999 - 1.55% prior to 2000/1.30% thereafter 2000 - 1.625% prior to 2002/1.30% thereafter 2002 - 1.625% prior to 2002/1.55% thereafter 2008 - 1.7% prior to 2008/1.55% thereafter
Alternate	2.0%	1999 - 2.25% prior to 2000/2.0% thereafter 2000 - 2.325 % prior to 2002/2.0% thereafter 2002 - 2.325 % prior to 2002/2.25% thereafter 2008 - 2.4% prior to 2008/2.25% thereafter, less other public benefits
* Class B Public Safety	2.0%	1994 - 2.0%/2.10% (for applicable years) 1997 - 2.10% prior to 1997/2.0% thereafter 1998 - 2.175% prior to 1998/2.0% thereafter 1999 - 2.25% prior to 2000/2.0% thereafter 2000 - 2.325% prior to 2002/2.0% thereafter 2008 - 2.4% prior to 2008/2.0% thereafter
* Class B Judicial	3.333% / 2.0%	1994 - 3.333%/3.433% (for applicable years) 2.0%/2.10% (for applicable years) 1997 - 3.433% prior to 1997/3.333% thereafter 2.10% prior to 1997/2.0% thereafter 1998 - 3.508% prior to 1998/3.333% thereafter 2.175% prior to 1998/2.0% thereafter 1999 - 3.583% prior to 2000/3.333% thereafter 2.25% prior to 2000/2.0% thereafter 2000 - 3.658% prior to 2002/3.333% thereafter 2.325% prior to 2002/2.0% thereafter 2008 - 3.733% prior to 2008/3.333% thereafter 2.4% prior to 2008/2.0% thereafter
Class A Retiree Benefit Formula	Variable	Standard - Alternate 1982 - 1.0% - 2.0% 1987 - 1.05% - 2.0% 1988 - 1.1% - 2.0% 1989 - 1.25% - 2.0% 1991 - 1.30% - 2.0% 1994 - 1.30%/1.40% (for applicable years) - 2.0% 1997 - 1.40% prior to 1997/1.30% thereafter - 2.0% 1998 - 1.475% prior to 1998/1.30% thereafter - 2.0% 1999 - 1.55% prior to 2000/1.30% thereafter 2.25% prior to 2000/2.0% thereafter 2000 - 1.625% prior to 2002/1.30% thereafter 2.325% prior to 2002/2.0% thereafter 2002 - 1.625% prior to 2002/1.55% thereafter 2.325% prior to 2002/2.25% thereafter 2008 - 1.7% prior to 2008/1.55% thereafter 2.4% prior to 2008/2.25% thereafter, less other public benefits
Improvement Factor	2% Simple	1978 - 2.0% compound (indexed) 1982 - 3.0% compound (indexed) 1988 - 3.0% compound 1993 - 3.1% compound 1998 - 3.1% compound and prorated for partial years 2010 - 2.1% to 3.1% compound, dependent on funded status of System and CPI 2017 - 0.5% to 3.5% compound, indexed to CPI-W and based on SDRS funded status

LETTER OF TRANSMITTAL (CONTINUED)

Foundation Member History of Changes in Basic Plan Provisions		
Provision	Status in 1974	Benefit Improvements
Early Retirement * Class A * Class B Public Safety * Class B Judicial	Early Retirement: Age 55 with 6% per year reduction Early Retirement: Age 45 with 6% per year reduction Early retirement: Age 55 with 6% per year reduction	1978 - Reduction decreased to 3% per year 1986 - Rule of 85 (age 60) 1989 - Removed "at work" limitation 1991 - Rule of 85 (age 58) 1993 - Rule of 85 (age 55) 1978 - Reduction decreased to 3% per year 1982 - Early retirement age for new members: age 50 1989 - Early retirement: age 45 for all Class B Public Safety members 1991 - Age 50/25 years of service 1998 - Rule of 75 (age 45) 1978 - Reduction decreased to 3% per year 1990 - Rule of 80 (age 55)
Optional Spouse Coverage <small>(no new enrollees after July 1, 2010)</small>	1.0% of compensation	1978 - 0.8% of compensation 2004 - 1.2% of compensation 2010 - 1.5% of compensation
Final Average Compensation Caps	Last quarter cap 125% of any previous quarter; four quarter average cap 115% of any previous quarter	2004 - Last quarter cap = 115% four quarter average cap = 110% 2005 - Last quarter cap = 105% four quarter average cap = 105% 2017 - For members whose credited service ends after June 30, 2020, the 5% cap applied to each year period considered in calculation of final average compensation
Special Pay Plan	Termination pay made directly to member with SS, SDRS, and income taxes deducted	2004 - Termination pay of \$600 or more without SS, SDRS, or income tax deductions for a terminating employee of a participating unit who is 55 or older goes to SPP
Purchasing Uncredited Service * Class A * Class B Public Safety * Class B Judicial	Buy at 10% of compensation Buy at 12% of compensation Buy at 12% of compensation	1989 - Buy at 7.5% of compensation 2002 - Buy at 9% of compensation 2004 - Buy at rate dependent on age and varying from 12% to 30% of compensation 1978 - Buy at 16% of compensation 1982 - Current members maximum of 20% of compensation; new members 16% of compensation 1989 - Buy at 12% of compensation 2004 - Buy at rate dependent on age and varying from 16% to 40% of compensation 1978 - Buy at 16% of compensation 1982 - Buy at maximum 20% of compensation 1989 - Buy at 13.5% of compensation 2004 - Buy at rate dependent on age and varying from 18% to 45% of compensation
Contribution Rate * Class A * Class B Public Safety * Class B Judicial	5% 6% 6%	2002 - 6% 1978 - 8% 1982 - For current member increasing 1/8 of 1% to maximum of 10%; for new members 8% 1989 - 8% for all members 1978 - 8% 1982 - 1/8 of 1% to maximum of 10% 1989 - capped at 9%
Eligibility Requirements * Vested Retirement Benefits * Disability Benefits	- Five years of credited service that includes purchased service - Five years of credited service unless disabled in an accident at work, then no specific amount of credited service is required	1998 - Three years of credited service including purchased service 2004 - Three years of contributory service, does not include purchased service 1998 - Three years of credited service including purchased service 2004 - Three years of contributory service since reentry into SDRS unless disabled in an accident at work, then no specific amount of contributory service is required

Foundation Member History of Changes in Basic Plan Provisions

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LETTER OF TRANSMITTAL (CONTINUED)

Generational Member History of Basic Plan Provisions	
Provision	Status since 2017
Benefit Formula * Class A * Class B Public Safety * Class B Judicial	1.80% 2.0% 3.333% / 2.0%
Improvement Factor	0.5% to 3.5% compound, indexed to CPI-W and based on SDRS funded status
Early Retirement * Class A * Class B Public Safety * Class B Judicial	Early retirement: age 57 with 5% per year reduction Early retirement: age 47 with 5% per year reduction Early retirement: age 57 with 5% per year reduction
Variable Retirement Account	A flexible benefit credited with up to 1.5% of compensation funded by part of the employer contribution. Investment earnings based on net investment return for fiscal year. Payable upon retirement, disability, or death.
Spouse Benefit	At retirement, married member may elect single-life benefit or a reduced joint and survivor benefit, with 60% or 100% of the member's benefit continuing to a surviving spouse

BOARD OF TRUSTEES

.....

James Johns Chair Represents public safety members
Board service began in July 2006
Captain
City of Rapid City
Black Hawk

Represents state employees
Board service began in July 2004
Engineering Supervisor
Department of Transportation
Glenham
Eric Stroeder Vice Chair

Karl Alberts Represents municipal employees
Board service began in July 2011
Finance Officer
City of Aberdeen
Aberdeen

Represents retirees
Board service began in July 1993
Retired Administrator
Pierre
James O. Hansen

James Appl Represents teachers
Board service began in July 2017
Public School Teacher
Aberdeen School District
Aberdeen

Represents county commissioners
Board service began in April 2016
Commissioner
Codington County
Watertown
Myron Johnson

Penny Brunken Represents teachers
Board service began in July 2016
Public School Teacher
Career & Technical Education Academy
Sioux Falls

Represents elected municipal officials
Board service began in July 2017
Mayor
City of Madison
Madison
Roy Lindsay

Liza Clark Governor's appointee
Board service began in July 2018
Commissioner
Bureau of Finance and Management
Pierre

Represents Board of Regents employees
Board service began in July 1990
Human Resource Assistant
South Dakota State University
Volga
Louise Loban

Matt Clark Represents South Dakota Investment Council
Board service began in January 2005
State Investment Officer
Non-voting ex-officio board member
Sioux Falls

Represents classified employees
Board service began in July 2018
Housing Management Officer
South Dakota Housing Development Authority
Pierre
Kevin Merrill

Laurie Gill Governor's appointee
Board service began in July 2013
Cabinet Secretary
Department of Social Services
Pierre

Represents county employees
Board service began in July 1997
Former Chief Deputy Auditor
Pennington County
Rapid City
Kathy "K.J." Peterson

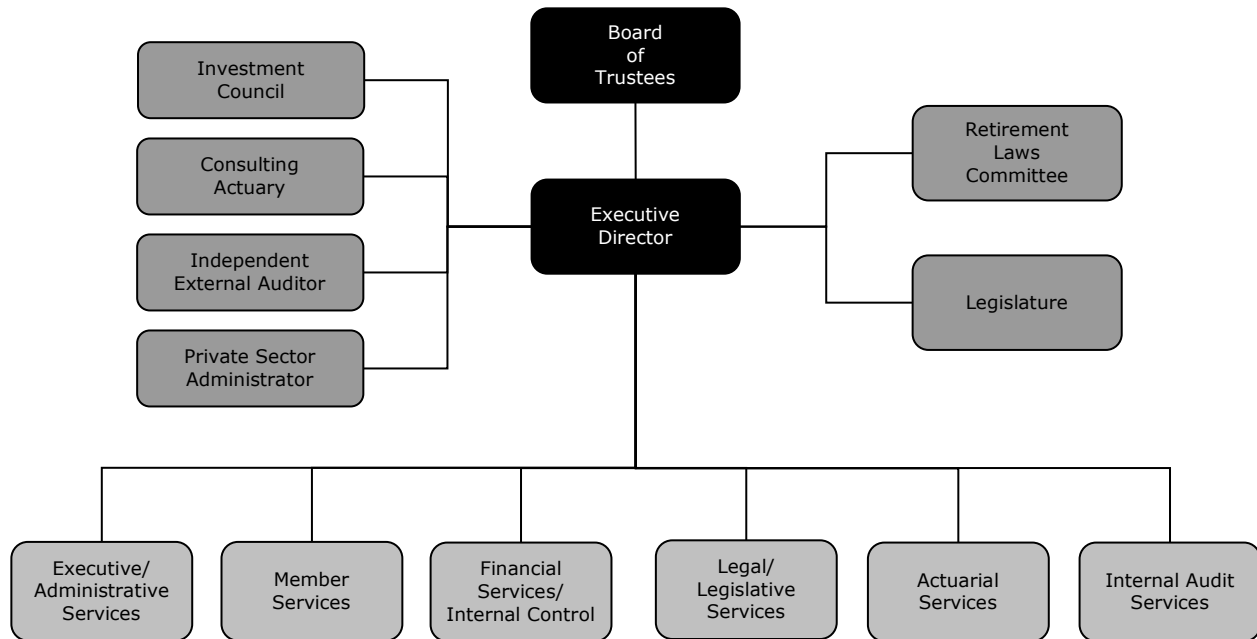
Kathryn Greenaway Represents school boards
Board service began in July 2016
Member
Yankton School Board
Yankton

Represents judicial employees
Board service began in December 2018
Justice
South Dakota Supreme Court
Sioux Falls
Justice Mark Salter

Laurie Gustafson Represents state employees
Board service began in July 2005
Former Labor Law Compliance Officer
Department of Transportation
Pierre

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ORGANIZATIONAL CHART



Administration

EXECUTIVE DIRECTOR Travis W. Almond, CRC®

EXECUTIVE ASSISTANT/
HUMAN RESOURCES
MANAGER Dawn M. Smith, CRC®

Management Group

DEPUTY DIRECTOR/
GENERAL COUNSEL Jacquelyn Storm, JD

CHIEF FINANCIAL OFFICER Jane Beer, CRC®

MEMBER SERVICES MANAGER Michelle Humann, CRC®

SENIOR ACTUARY Douglas J. Fiddler,
ASA, EA, MAAA, FCA

AUDIT MANAGER Brittnie Adamson, CRC®

Advisors, Auditors, and Administrators

EXTERNAL CONSULTING
ACTUARY Cavanaugh Macdonald
Consulting, LLC
Naperville, IL

EXTERNAL
AUDITOR Eide Bailly LLP
Boise, ID

PRIVATE SECTOR
ADMINISTRATOR Nationwide Retirement Solutions
Columbus, OH

RETIREMENT
CONSULTANT R. Paul Schrader
Denver, CO

INFORMATION SERVICES State of South Dakota
Bureau of Information and
Telecommunications (BIT)
Pierre, SD

Schedules of Administrative Expenses and Investment Activity Expenses are located on page 42.

FINANCIAL SUMMARY



Auditor's Opinion
Management's Discussion and Analysis
Basic Financial Statements
Statement of Fiduciary Net Position
Statement of Changes in Fiduciary Net Position
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Schedule of System's Net Pension Asset
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Schedule of Investment Activity Expenses
GASB Letter

AUDITOR'S OPINION



CPAs & BUSINESS ADVISORS

Independent Auditor's Report

To the Board of Trustees
South Dakota Retirement System
Pierre, South Dakota

Report on the Financial Statements

We have audited the accompanying financial statements of the South Dakota Retirement System (SDRS), which comprise the statement of fiduciary net position as of June 30, 2019, and the related statement of changes in fiduciary net position, for the year then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

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Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective statement of the fiduciary net position of the South Dakota Retirement System, as of June 30, 2019, and the respective statement of changes in fiduciary net position thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As described in Note 2 to the financial statements, the financial statements include investments valued at \$2,257,030,399 (18.10 percent of net position) whose carrying values have been estimated by management in the absence of readily determinable fair values. Management's estimates are based on information provided by the fund managers or the general partners. Our opinion is not modified with respect to this matter.

Other Matters**Required Supplementary Information**

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and the required supplementary information on pages 23-26 and 39-44 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise SDRS's basic financial statements as a whole.

The additional supplementary information listed as other supplementary information in the table of contents are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the accompanying financial information listed as supplemental schedules are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

AUDITOR'S OPINION (CONTINUED)

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated November 6, 2019, on our consideration of SDRS's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of SDRS's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering SDRS's internal control over financial reporting and compliance.



Boise, Idaho
November 6, 2019

MANAGEMENT'S DISCUSSION AND ANALYSIS

This section presents management's discussion and analysis of the South Dakota Retirement System's (SDRS or the System) financial position and performance as of and for the year ended June 30, 2019. This section is intended to supplement the SDRS financial statements and should be read in conjunction with the remainder of the SDRS financial statements.

- The fiduciary net position of SDRS increased by \$237 million during fiscal year 2019. This increase was primarily due to the investment performance of 4.87 percent, which was below the assumed rate of 6.50 percent.
- SDRS paid \$572 million to SDRS benefit recipients in fiscal year 2019 compared to \$542 million in 2018.
- SDRS received \$255 million in SDRS member and employer contributions in fiscal year 2019 compared to \$249 million in 2018.

The basic financial statements consist of:

Financial Statements

The System presents the statement of the fiduciary net position as of June 30, 2019, and the statement of changes in fiduciary net position for the year then ended. These statements reflect resources available for the payment of benefits as of the year-end and sources and uses of those funds during the year.

Notes to Financial Statements

The notes to financial statements are an integral part of the financial statements and provide additional detailed information and schedules. Information in the notes provides disclosures concerning SDRS's organization, contributions and reserves, investments, the use of derivatives and securities lending, and other information.

Supplemental Information

In addition to this discussion and analysis, the required supplemental information consists of four schedules of trend data and related notes concerning the funded status of SDRS, changes in net pension liability (asset), investment returns, actuarial assumptions, and employer contributions.

Other supplementary schedules include detailed information on administrative expenses incurred by SDRS and a breakout of investment manager fees.

SDRS is a cost-sharing, multiple-employer public employee retirement system. SDRS provides retirement, disability, and survivor benefits for employees of the state of South Dakota and its political subdivisions. The benefits are funded through member and employer contributions and investment income.

SDRS benefits are based on the members' final average compensation, their years of credited service, and a benefit multiplier.

Financial Highlights

Overview of the Financial Statements and Accompanying Information

Financial Analysis

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

Summary of Fiduciary Net Position June 30, 2019 and 2018

A summary of the fiduciary net position is shown below:

Assets	2019	2018
Cash and cash equivalents	\$ 7,488,388	\$ 6,485,922
Receivables	384,345,349	50,412,410
Investments, at fair value	12,344,910,568	12,197,453,935
Other assets	1,470,817	1,728,700
Total assets	\$12,738,215,122	\$12,256,080,967
Liabilities		
Accounts payable and accrued expenses	\$ 2,115,371	\$ 1,872,698
Unsettled investment purchases	263,300,094	18,489,014
Total liabilities	\$ 265,415,465	\$ 20,361,712
Net position restricted for pension benefits	\$12,472,799,657	\$12,235,719,255

Change in Fiduciary Net Position

Additions to the fiduciary net position include member and employer contributions and net investment income. The fixed member and employer contribution rates are established by law. On an annual basis, an actuarial valuation of SDRS is made to determine the adequacy of the fixed contribution rates to pay the normal cost of benefits, expenses, and amortize the unfunded actuarial accrued liability. In addition to the fixed contributions, members and employers may make additional contributions to purchase uncredited prior service. These purchase or acquisition payments are also included as contributions.

Income from investments is the other primary source of revenue for SDRS. The actuarial assumed investment rate was 6.5 percent at June 30, 2019. The net investment returns were 4.9 percent for 2019 and 7.9 percent for 2018.

Deductions from fiduciary net position are primarily benefit payments. During 2019, SDRS paid \$572 million to benefit recipients or 5.5 percent more than 2018. The increase is due to the annual cost-of-living adjustment, which was 1.89 percent for fiscal year 2019, and additional annuitants. Refunds of accumulated contributions during 2019 increased 10.2 percent. Administrative costs of SDRS increased 4.6 percent during 2019.

A summary of the changes in fiduciary net position is shown below:

	2019	2018	% Change
Additions:			
Employee contributions	\$ 127,454,956	\$ 124,262,387	2.6%
Employer contributions	127,572,348	124,734,270	2.3
Investment income	583,573,718	911,695,475	(36.0)
Total additions	838,601,022	1,160,692,132	(27.7)
Deductions:			
Benefits	572,351,398	542,300,333	5.5
Refunds of contributions	24,073,325	21,840,814	10.2
Administrative expenses	5,095,897	4,870,334	4.6
Total deductions	601,520,620	569,011,481	5.7
Net change in net position	237,080,402	591,680,651	(59.9)
Plan net position restricted for pension benefits:			
Beginning of year	<u>12,235,719,255</u>	<u>11,644,038,604</u>	<u>5.1</u>
End of year	<u>\$12,472,799,657</u>	<u>\$12,235,719,255</u>	<u>1.9%</u>

SDRS investment portfolio management is the statutory responsibility of the South Dakota Investment Council. The South Dakota Investment Office is the primary investment manager, but the Investment Council may utilize the services of external money managers.

Investments

Net investment performance during 2019 and 2018 was 4.9 percent and 7.9 percent, respectively.

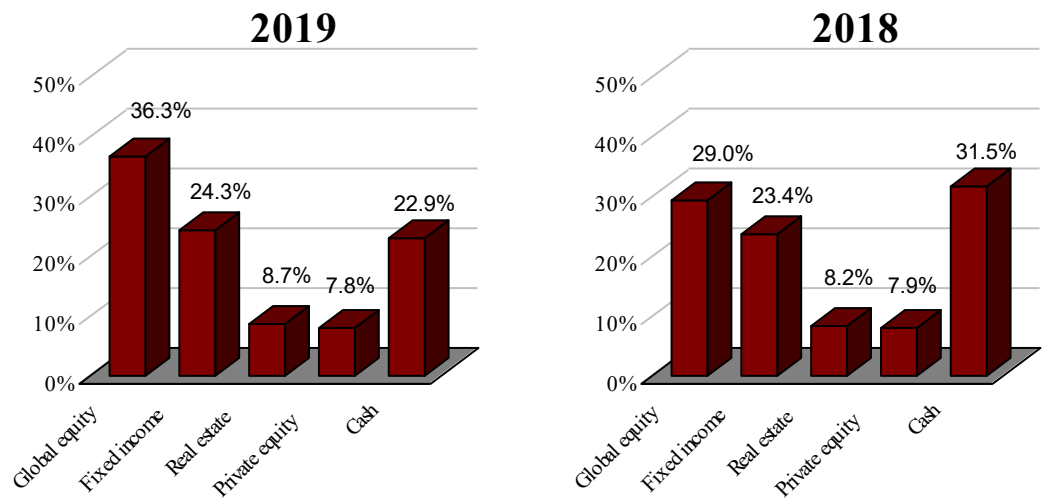
The Investment Council is governed by the prudent-man standard, as defined in South Dakota Codified Law §4-5-27:

§4-5-27. Prudent-man standard required in investments. Any investments under the provisions of §4-5-12 to §4-5-39, inclusive, shall be made with the exercise of that degree of judgment and care, under circumstances then prevailing, which persons of prudence, discretion, and intelligence exercise in the management of their own affairs, not for speculation but for investment, considering the probable safety of their capital as well as the probable income to be derived.

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

Though monthly benefit payments exceed monthly contributions, SDRS is not subject to sudden, substantial, and unexpected withdrawals. As a result, it is not necessary to maintain a high percentage of assets in short-term investments unless that is deemed to be the best investment strategy. This allows the SDRS trust fund to be fully invested in a diversified portfolio of securities.

Investment Summary



Plan Status

While the markets have not always made it possible to achieve the long-term assumptions, the System's funding remains solid.

Requests for Information

Requests for information about SDRS may be directed to the South Dakota Retirement System at P.O. Box 1098, Pierre, SD 57501. You may also contact SDRS online at www.sdrs.sd.gov.

BASIC FINANCIAL STATEMENTS

Assets

Cash and cash equivalents	<u>\$7,488,388</u>
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Receivables:

Employer	2,780,514
Employee	3,050,929
Benefits	78,693
Unsettled investment sales	340,572,887
Accrued interest and dividends	<u>37,862,326</u>

Total receivables	<u>384,345,349</u>
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Investments, at fair value:

Equities	5,934,121,234
Fixed income	4,352,120,698
Real estate	1,086,737,834
Private equity	<u>971,930,802</u>

Total investments, at fair value	<u>12,344,910,568</u>
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Assets used in plan operations, at cost (net of accumulated depreciation of \$607,343)	1,453,258
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Other assets	<u>17,559</u>
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Total assets	<u>12,738,215,122</u>
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Liabilities

Accounts payable and accrued expenses	2,115,371
Unsettled investment purchases	<u>263,300,094</u>

Total liabilities	<u>265,415,465</u>
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Net position restricted for pension benefits	<u>\$12,472,799,657</u>
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**Statement of
Fiduciary Net
Position
June 30, 2019**

See accompanying notes to financial statements.

BASIC FINANCIAL STATEMENTS (CONTINUED)

Statement of Changes in Fiduciary Net Position Year Ended June 30, 2019

Additions	
Contributions:	
Employee	\$127,454,956
Employer	<u>127,572,348</u>
Total contributions	<u>\$255,027,304</u>
Investment income	
<i>From investing activities:</i>	
Net appreciation in fair value of investments	314,247,712
Interest	142,442,232
Dividends	132,255,600
Real estate	<u>44,797,745</u>
Investment activity income	633,743,289
Less investment activity expenses	<u>(50,977,774)</u>
Net investment activity income	<u>582,765,515</u>
<i>From security lending activities:</i>	
Security lending income	1,154,528
Security lending expenses	<u>(346,325)</u>
	<u>808,203</u>
Total additions	<u>838,601,022</u>
Deductions	
Benefits	572,351,398
Refunds of contributions	24,073,325
Administrative expenses	<u>5,095,897</u>
Total deductions	<u>601,520,620</u>
Net change in net position	<u>237,080,402</u>
Net position restricted for pension benefits	
Beginning of year	<u>12,235,719,255</u>
End of year	<u>\$12,472,799,657</u>

See accompanying notes to financial statements.

Notes to Financial Statements

1) General Description of the System

The South Dakota Retirement System (SDRS or the System) is a cost-sharing, multiple-employer public employee retirement system (PERS) established to provide retirement benefits for employees of the state of South Dakota (the State) and its political subdivisions. Members of SDRS include full-time employees of public schools, the State, the Board of Regents, city and county governments, and other public entities. Public schools, cities, and counties may choose not to include certain full-time employees in the System.

SDRS is considered a part of the State financial reporting entity and is included in the State's financial report as a pension trust fund. Authority for establishing, administering, and amending plan provisions is found in South Dakota Codified Law (SDCL) 3-12C.

The South Dakota Retirement System Board of Trustees (the Board) is the governing authority of SDRS. The Board consists of 14 elected representatives from participating groups, two appointees of the governor, and an ex-officio nonvoting representative of the South Dakota Investment Council. The elected representatives of the Board are two teacher members; two State employee members; a participating municipality member; a participating county member; a participating classified employee member; a current contributing Class B member other than a justice, judge, or magistrate judge; a county commissioner of a participating county; a school district board member; a justice, judge, or magistrate judge; an elected municipal official of a participating municipality; a retiree; and a faculty or administrative member employed by the Board of Regents. The two Governor's appointees consist of one head of a principal department established pursuant to SDCL 1-32-2, or one head of a bureau under the office of executive management and one individual from the private or public sector.

SDRS is a hybrid defined benefit plan designed with several defined contribution plan type provisions. The system includes three classes of members: Class A general members, Class B public safety and judicial members, and Class C Cement Plant Retirement Fund members. Members and their employers make matching contributions, which are defined in State statute. SDRS may expend up to 3 percent of the annual contributions for administrative expenses subject to approval by the executive and legislative branches of the State.

Members that were hired before July 1, 2017, are Foundation members. Class A Foundation members and Class B Foundation judicial members who retire after age 65 with three years of contributory service are entitled to an unreduced annual retirement benefit. An unreduced annual retirement benefit is also available after age 55 for Class A Foundation members where the sum of age and credited service is equal to or greater than 85 or after age 55 for Class B Foundation judicial members where the sum of age and credited service is equal to or greater than 80. Class B Foundation public safety members can retire with an unreduced annual retirement benefit after age 55 with three

years of contributory service. An unreduced annual retirement benefit is also available after age 45 for Class B Foundation public safety members where the sum of age and credited service is equal to or greater than 75. All Foundation retirement benefits that do not meet the above criteria may be payable at a reduced level. Eligible spouses of Class A and B Foundation members will receive a 60 percent joint and survivor benefit.

Members that were hired on/after July 1, 2017, are Generational members. Class A Generational members and Class B Generational judicial members who retire after age 67 with three years of contributory service are entitled to an unreduced annual retirement benefit. Class B Generational public safety members can retire with an unreduced annual retirement benefit after age 57 with three years of contributory service. At retirement, married Generational members may elect a single-life benefit, a 60 percent joint and survivor benefit, or a 100 percent joint and survivor benefit. All Generational retirement benefits that do not meet the above criteria may be payable at a reduced level. Generational members will also have a variable retirement account (VRA) established, in which they will receive up to 1.5 percent of compensation funded by part of the employer contribution. VRAs will receive investment earnings based on investment returns.

Class C Cement Plant Retirement Fund members have a normal retirement age of 65 and early retirement is age 55 with the required credited service. Class C Cement Plant provides for disability payments for those disabled on or before March 16, 2001. All members of the Cement Plant Retirement Plan on March 15, 2001, were 100 percent vested. Class C members may elect a single-life benefit, or joint and survivor benefits as described in their plan documents.

Legislation enacted in 2017 established the current COLA process. At each valuation date:

- Baseline actuarial accrued liabilities will be calculated assuming the COLA is equal to the long-term inflation assumption of 2.25 percent.
- If the fair value of assets is greater or equal to the baseline actuarial accrued liabilities, the COLA will be:
 - * The increase in the 3rd quarter CPI-W, no less than 0.5 percent and no greater than 3.5 percent.
- If the fair value of assets is less than the baseline actuarial accrued liabilities, the COLA will be:
 - * The increase in the 3rd quarter CPI-W, no less than 0.5 percent and no greater than a restricted maximum such that, that if the restricted maximum is assumed for future COLAs, the fair value of assets will be greater or equal to the accrued liabilities.

All benefits except those depending on the Member's Accumulated Contributions are annually increased by the Cost-of-Living Adjustment.

SDRS is a qualified defined benefit retirement plan under Section 401(a) of the Internal Revenue Code and is exempt from federal income taxes. SDRS last received a favorable determination letter dated October 3, 2016, in which the Internal Revenue Service stated that the System, as then

BASIC FINANCIAL STATEMENTS (CONTINUED)

designated, was in compliance with the applicable requirements of the Internal Revenue Code. SDRS believes that the system currently is designed and being operated in compliance with the applicable requirements of the Internal Revenue Code, and therefore, SDRS continues to be tax-exempt as of June 30, 2019. Therefore, no provision for income taxes has been included in SDRS's financial statements.

SDRS is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees; and natural disasters. SDRS participates in the various programs administered by the State. These risk management programs are funded through assessments charged to participating entities. The risk management programs include (1) coverage for risks associated with automobile liability and general tort liability (including public officials' errors and omissions liability, medical malpractice liability, law enforcement liability, and products liability) through the State's Public Entity Pool for Liability Fund, (2) coverage of employee medical claims through the State's health insurance program, (3) coverage for unemployment benefits through the State's Unemployment Insurance Fund, and, (4) coverage for workers' compensation benefits through the State's Workers' Compensation Fund. Financial information relative to the self-insurance funds administered by the State is presented in the State of South Dakota Comprehensive Annual Financial Report.

As of June 30, 2019, the number of participating governmental employers is as follows:

School Districts	164
State of South Dakota	1
Board of Regents	1
Municipalities	167
Counties	65
Boards and Commissions	99
Total employers	<u>497</u>

At June 30, 2019, SDRS membership consists of the following:

Retirees and beneficiaries currently receiving benefits:	
Class A (general employees)	27,109
Class B (public safety and judicial employees)	1,848
Class C (cement plant employees)	239
Total retirees and beneficiaries	29,196
Terminated members entitled to benefits but not yet receiving them:	
Class A (general employees)	17,938
Class B (public safety and judicial employees)	1,017
Class C (cement plant employees)	34
Total terminated members	18,989
Current active members:	
Vested:	
Class A (general employees)	29,970
Class B (public safety and judicial employees)	2,334
Class C (cement plant employees)	13
Non-vested:	
Class A (general employees)	8,280
Class B (public safety and judicial employees)	903
Total current active members	41,500
Grand total	<u>89,685</u>

* There are 116 Class A and 11 Class B public safety and judicial members or beneficiaries whose benefits are currently suspended but are entitled to future benefits. These members or beneficiaries are included as retirees and beneficiaries in their respective classes as listed.

2) Summary of Significant Accounting Policies

a) Basis of Accounting and Presentation

The accompanying financial statements are prepared using the accrual basis of accounting in accordance with U.S. generally accepted accounting principles applicable to governmental accounting for a pension trust fund. Employee and employer contributions are recognized when due pursuant to formal commitment, as well as statutory requirements. Pension benefit payments are due the first day of the month following the retirement of a member, and the first of each month thereafter. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

b) Method Used to Value Investments

Investments are reported at fair value, in accordance with Governmental Accounting Standards Board (GASB) Statement No. 72. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. GASB 72 sets forth the framework for measuring value. The framework provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three levels. The three levels of the fair value hierarchy under GASB 72 are described as follows:

Level 1—Valuation inputs are quoted prices in active markets for identical asset or liability as of the measurement date.

Level 2—Valuation inputs other than quoted prices included within Level 1 that are observable for an asset or liability, either directly or indirectly.

Level 3—Valuation inputs are based on significant unobservable inputs for an asset or liability.

As a practical expedient, GASB 72 allows the net asset value (NAV) or its equivalent to be used when a readily determinable fair value is not available. The NAV valuations are based on valuations of the underlying companies as determined and reported by the fund manager or general partner and are excluded from the fair value hierarchy.

Additional required disclosures can be found in Note 5: Cash and Investments.

Investments denominated in foreign currencies are translated into United States Dollars (USD) using the year-end spot foreign currency exchange rates. Foreign exchange rate gains and losses are included with the net appreciation in fair value of investments.

Alternative investments consist of investments in a variety of markets and industries through partnerships, corporate entities, co-investments, and other investment vehicles. For alternative investments where no readily ascertainable market value exists, management, in consultation with their investment advisors, values these investments in good faith based upon the investment's current financial statements or other information provided by the underlying investment advisor. For all of these alternative investments, SDRS has determined that net asset value reported by the underlying fund approximates the fair value of the investment. These fair value estimates are, by their nature, subjective and based on judgment. These alternative investments were valued at \$2,257,030,399 (18.1 percent of net position) at June 30, 2019. The estimated fair value of these investments may differ significantly from values that would have been used had a ready market existed.

Futures contracts are marked to market based on quoted futures prices with changes in fair value reflected in the current period.

Interest is accrued in the period in which it is earned and dividend income is recorded on the ex-dividend date.

The arithmetically calculated money-weighted return net of fees was 4.87 percent in 2019. The money-weighted rate of return considers the changing amounts actually invested during a period and weights the amount of pension plan investment by the proportion of time they are available to earn during that period. The rate of return equates the sum of weighted external cash flows into and out of pension plan investments to the ending fair value of the pension plan investment.

c) Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires the plan administrator to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, and changes therein. Actual results could differ from those estimates.

3) Contributions and Reserves

a) Contributions

Covered employees are required by statute to contribute a percentage of their salary to SDRS as follows:

Class A members	6.0% of salary
Class B public safety members	8.0% of salary
Class B judicial members	9.0% of salary

All participating employers are required to contribute an amount equal to the members' contributions. Members may make an additional contribution of 1.5 percent of compensation for optional spouse coverage (closed to new enrollees after July 1, 2010).

SDRS is funded by fixed member and employer contributions at a rate established by South Dakota law. On an annual basis, an actuarial valuation of SDRS is performed to determine the adequacy of the fixed contributions to pay the normal costs and expenses if the System is fully funded or pay the normal costs, expenses, and amortize the unfunded actuarial accrued liability (UAAL) if the System is not fully funded. The June 30, 2019, actuarial valuation of the plan determined that the System is fully funded and that the statutorily required employer contributions meet the requirements for the annual required contributions of the employers under GASB Statement No. 67, *Financial Reporting for Pension Plans*; and the statutorily required employer contributions are sufficient to pay the employer normal cost and expenses. Annual required contributions of the employers equal to the statutorily required contributions have been listed below pursuant to GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*.

Contributions during fiscal year 2019 totaling \$255,027,304 (\$127,454,956 employee, \$127,572,348 employer) were made in accordance with statutory rates. The employer contributions exceed the employee contributions due to the effect of SDCL 3-12C-1405, which governs the contributions of retired members who enter covered employment. Contributions for the last 5 fiscal years are as follows:

<u>Year ending June 30</u>	<u>Employer</u>	<u>% Contributed</u>
2019	\$127,572,348	100%
2018	124,734,270	100
2017	121,907,646	100
2016	114,090,075	100
2015	109,549,977	100

SDRS allows participating entities to pay their deferred contributions for funding of accrued benefits over periods of up to 20 years and members to pay for the purchase of certain prior service over periods of up to 10 years. Interest is charged at rates of 5 percent to 8 percent.

BASIC FINANCIAL STATEMENTS (CONTINUED)

Future payments will be received as follows:

<u>Year ending June 30</u>	<u>Employees</u>
2020	\$75,079
2021	55,694
2022	53,876
2023	27,891
2024	26,591
Later	<u>76,163</u>
Deferred contributions receivable at June 30, 2019	<u>\$315,294</u>

Sensitivity of (asset)/liability to changes in the discount rate—The following presents the net pension (asset)/liability of the System, calculated using the discount rate of 6.50 percent, as well as what the System's net pension (asset) liability would be if it were calculated using a discount rate that is 1 percent point lower (5.50 percent) or 1 percent point higher (7.50 percent) than the current rate:

	<u>1% Decrease</u>	<u>Current Discount Rate</u>	<u>1% Increase</u>
System's net pension (asset)/liability	\$1,758,938,029	\$(10,597,261)	\$(1,452,448,776)

4) Net Pension Liability (Asset) of the System

The components of the net pension liability (asset) of the System at June 30, 2019, was as follows:

Total pension liability	\$ 12,462,202,396
Plan fiduciary net position	<u>(12,472,799,657)</u>
Net pension liability (asset)	<u>\$ (10,597,261)</u>

Fiduciary net position as a percentage
of net pension liability 100.09%

Actuarial Assumptions—The total pension liability was determined by an actuarial valuation as of June 30, 2019, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.25%
Salary increases	6.50% at entry to 3.0% after 25 years of service
Discount rate	6.50%, net of pension plan investment expenses
Future COLAs	1.88%

Mortality rates were based on 97 percent of the RP-2014 Mortality Table, adjusted to 2006 and projected generationally with Scale MP-2016, white collar rates for females and total dataset rates for males. Mortality rates for disabled members were based on the RP-2014 Disabled Retiree Mortality Table, adjusted to 2006 and projected generationally with Scale MP-2016.

The actuarial assumptions used in the June 30, 2019, valuation were based on the results of an actuarial experience study for the period of July 1, 2011, to June 30, 2016.

Discount Rate—The discount rate used to measure the total pension liability was 6.50 percent. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that matching employer contributions will be made at rates equal to the member rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

5) Cash and Investments

Cash and Deposits

Cash and cash equivalents are held by the State Treasurer and were invested in the State's pooled investment fund. Investments in the State's pooled investment fund consist primarily of short-term U.S. Treasury and Agency obligations, short-term U.S. Corporate securities, bank certificates of deposit, and money market funds.

The custodial credit risk for deposits is the risk that, in the event of the failure of a depository institution, a government will not be able to recover deposits or will not be able to recover collateral securities that are held in the possession of an outside party. SDRS has a formal deposit policy specific to custodial credit risk and foreign currencies. Policy states that the USD equivalent of any non-USD currency cannot exceed 2.0 percent of any portfolio on a trade date +7 days basis. All portfolios as of June 30, 2019, meet policy guidelines. These deposits are not collateralized or covered by depository insurance. As a result, \$15,807,559 was exposed to custodial credit risk, which is recorded in investments in the statement of fiduciary net position.

Investments

Investment portfolio management is the statutory responsibility of the South Dakota Investment Council (SDIC), which may utilize the services of external money managers for management of a portion of the portfolio. SDIC is governed by the Prudent Man Rule (i.e., the council should use the same degree of care as a prudent man). Current SDIC investment policies dictate limits on the percentage of assets invested in various types of vehicles (equities, fixed income securities, real estate, cash, private equity, etc.). The long-term expected rate of return on pension plan investments was determined using a method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighing the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of real rates of return for each major asset class included in the pension plan's target asset allocation as of June 30, 2018, (see the discussion of the pension plan's investment policy) are

summarized in the following table using geometric means:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-Term Expected Real Rate of Return</u>
Global equity	58%	4.7%
Fixed income	30%	1.7%
Real estate	10%	4.3%
Cash	2%	0.9%
	100%	

Below is a detail of the investment balances and amounts managed by the respective fund managers:

	<u>Cost</u>	<u>Fair Value</u>
State of South Dakota Investment Council	\$8,314,290,226	\$9,195,330,016
Apollo	—	47,772
Ares	5,158,014	2,775,743
Blackstone Private Equity	159,638,816	229,830,386
Blackstone Real Estate Partners	599,209,978	704,886,328
Brandes Global Mid-Cap	70,851	70,544
Bridgewater Pure Alpha Fund II	36,742,005	96,025,726
Brookfield Strategic RE III	20,020,131	21,378,452
Capital International	46,379,701	43,506,885
Cargill North American Real Estate Partners	—	19,443
Carlyle	90,743,798	98,626,435
Cinven	100,524,619	100,675,027
CVC	55,772,726	38,064,496
CVI Global Value Fund	27,247,784	7,077,318
Cypress Merchant Banking Partners LP	26,315	26,315
Dimensional Fund Advisors, Inc.	14,949,080	61,584,998
Doughty Hanson & Co European Real Estate	442,225	700,170
Doughty Hanson PE IV	3,806,350	1,812,554
Elevation Partners	288,267	96,628
Encap Energy	7,265,091	7,370,873
KKR Associates	834,840	533,049
Lone Star Real Estate	120,597,615	133,617,592
Pinebridge	5,322,335	3,319,317
Riverstone	171,086,438	144,083,623
Rockpoint RE IV	110,343,405	132,143,027
Sanders All Asset Value	28,909,856	33,673,721
Sanders Capital	48,793,402	58,813,615
Silver Lake Partners LP	198,068,302	303,985,214
Starwood RE IX	87,810,072	91,169,307
TCW Opp MBS Strategy	748,693,187	833,665,994
Total	\$11,003,035,428	\$12,344,910,568

a) Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The investment grade fixed income portfolios of SDRS are benchmarked to the duration of the Citigroup Broad Investment Grade (BIG) Index and must fall between 70 percent and 130 percent of the BIGs duration.

The durations of the various investment types are listed in the following table:

<u>Investment type</u>	<u>Fair value</u>	<u>Duration (in years)</u>
U.S. Treasuries	\$91,422,739	6.32
U.S. Treasury Bills	660,000,546	0.14
U.S. Treasury STRIPS	231,082,964	7.72
U.S. agencies	54,121,871	7.11
Investment grade corporates	385,260,318	4.51
High-yield corporates	466,509,007	2.96
Agency mortgage-backed securities	335,863,649	4.26
Non-agency mortgage-backed securities	793,174,355	0.74
Total	\$3,017,435,449	2.64

The SDRS fixed income portfolios invest in mortgage-backed securities. These securities are sensitive to prepayments by mortgagees, which is likely in declining

interest rate environments, thereby reducing the value of these securities.

b) Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations to SDRS. SDIC sets the investment policy annually for the SDRS. This policy establishes the average percentage invested in each asset category and the fund allocation range that each asset category can vary during the fiscal year. As of June 30, 2019, the portfolios held the following investments, excluding those issued by or explicitly guaranteed by the U. S. government, which are not considered to have credit risk. The investments are grouped as rated by Moody's Investors Service.

<u>Moody's rating</u>	<u>Fair value</u>
Aaa	\$1,646,057,376
Aa	111,488,507
A	147,305,276
Baa	164,507,754
Ba	232,962,315
B	272,913,684
Caa	224,204,015
Ca	146,414,652
C	5,775,684
Unrated	306,524,002
Total	\$3,258,153,265

c) Concentration of Credit Risk

Concentration of credit risk is the risk of loss that may be attributed to the magnitude of SDRS's investment in a single issuer. SDRS does not have guidelines to limit its investments in any particular investment. SDRS does not have investments in any one issuer that represent 5 percent or more of the total fair value of investments as of June 30, 2019 (excluding those issued by or explicitly guaranteed by the U.S. government).

d) Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely impact the fair value of an investment. SDRS's exposure to foreign currency risk derives from its positions in foreign currency and foreign-currency-denominated equity and fixed income investments. SDRS does not hedge foreign currency back to U.S. dollars (to match the unhedged benchmark), but does allow hedging under certain circumstances, when deemed appropriate. The portfolio's exposure to foreign currency risk at June 30, 2019, is as follows (in U.S. dollar fair value):

<u>Currency</u>	<u>Equities</u>	<u>Cash</u>	<u>Total</u>
Australian Dollar	\$ 24,403,142	\$ 177,356	\$ 24,580,498
Brazilian Real	—	5,295	5,295
British Pound	223,268,973	3,752,407	227,021,380
Canadian Dollar	87,371,947	431,899	87,803,846
Danish Kroner	15,135,274	—	15,135,274
Euro	358,514,753	9,444,248	367,959,001
Hong Kong Dollar	17,634,313	113,934	17,748,247
Japanese Yen	198,613,714	1,882,420	200,496,134
Korean Won	87,091,438	—	87,091,438
Norwegian Krone	1,750,479	—	1,750,479
Singapore Dollar	989,154	—	989,154
Swedish Krona	15,623,722	—	15,623,722
Swiss Franc	211,813,977	—	211,813,977
Thai Baht	1,155,764	—	1,155,764
Total fair value	\$1,243,366,650	\$15,807,559	\$1,259,174,209

BASIC FINANCIAL STATEMENTS (CONTINUED)

Investments with limited partnerships and certain global equity investments with external managers, which are not included in the table above, may expose SDRS's portfolio to additional foreign currency risk. The total fair value of investments in real estate and private equity limited partnerships as of June 30, 2019, was \$2,058,668,636. The total fair value of global equity and high-yield fixed income investments managed by external managers was \$61,584,998 and \$7,077,318, respectively.

e) Return on Investments

During fiscal year 2019, SDRS's investments (including investments bought and sold, as well as held during the year) appreciated in value by \$314,247,712.

The calculation of realized gains and losses is independent of a calculation of the net change in the fair value of investments. Realized gains and losses on investments that had been held in more than one fiscal year and sold in the current year were included as a change in the fair value of investments reported in the prior years and current year.

Change in Fair Value of Investments

Appreciation (Depreciation) in fair value of investments:

Equities	\$(372,591,838)
Fixed income	24,127,632
Real estate	16,802,500
Private equity	(66,449,748)
Change in accrued income	5,707,235
Total decrease in fair value	(392,404,219)

Realized gain (loss) on investments:

Equities	408,625,814
Fixed income	20,383,524
Real estate	51,485,858
Private equity	92,035,789
Total net realized gains	572,530,985

Futures—change in unrealized gain (loss)	(68,748,296)
Futures—realized gain (loss)	202,869,242
Net gain on futures	134,120,946
Net appreciation in investments	\$ 314,247,712

f) Securities Lending

State statutes and the SDRS policies permit the use of investments for securities lending transactions. These transactions involve the lending of corporate debt, foreign equity securities, and domestic equity securities to broker-dealers for collateral in the form of securities, with the simultaneous agreement to return the collateral for the same securities in the future. SDRS's securities custodian is an agent in lending securities and shall accept only U.S. government securities or its agencies as collateral for any loan or loaned securities. The collateral required must equal 102 percent of fair value plus accrued interest for corporate debt securities, 102 percent of fair value for U.S. equity securities, and 105 percent of fair value for foreign securities except in the case of loans of foreign securities, which are denominated and payable in U.S. dollars, in which event the collateral required is 102 percent of fair value. The earnings generated from the collateral investments result in the gross earnings from lending activities, which is then split on a percentage basis with the lending agent.

The fair value of securities on loan as of June 30, 2019, was \$321,636,462 and the collateral held on the same date was \$328,610,125. SDRS has no credit risk exposure to borrowers because the amounts the SDRS owes the borrowers exceed the amounts the borrowers owe the SDRS. The contract with the lending agent requires the agent to indemnify SDRS if the borrowers fail to return the loaned securities and the collateral is inadequate to replace the securities lent.

All securities loans can be terminated on demand by either SDRS or the borrower. SDRS does not have the ability to pledge or sell collateral securities unless the borrower defaults; therefore, no asset and corresponding liability for the collateral value of securities received has been established on the statement of fiduciary net position. Regarding restrictions on loans, the securities lending agreement does limit the total value of securities that can be out on loan on any given day.

g) Custodial Credit Risk

The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, a government will not be able to recover the value of investment or collateral securities that are in the possession of an outside party. SDRS securities lending policies are detailed in the preceding Securities Lending section. As of June 30, 2019, the SDRS does not have custodial credit risk with regard to the security lending collateral.

h) Fair Value Measurements and Applications
The following table shows the fair value in accordance with the GASB hierarchy:

		Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3
Investments by fair value level		06/30/19		
Fixed income securities				
U.S. Treasuries	\$ 91,422,739	\$ —	\$ 91,422,739	\$ —
U.S. Treasury Bills	660,000,546	—	660,000,546	—
U.S. Treasury STRIPS	231,082,964	—	231,082,964	—
U.S. Agencies	54,121,871	—	54,121,871	—
Investment Grade Corporates	385,260,318	—	385,260,318	—
High Yield Corporates	466,509,007	—	466,509,007	—
Agency Mortgage-Backed Securities	335,863,649	—	335,863,649	—
Non-Agency Mortgage-Backed Securities	793,174,355	—	793,174,355	—
Total fixed income securities	3,017,435,449	—	3,017,435,449	—
Equity securities				
Domestic Stock	4,014,625,036	4,014,049,051	575,985	—
Depository Receipts	53,900,310	53,900,310	—	—
ETF-Exchange Traded Funds	425,657,798	425,657,798	—	—
International Stock	1,243,366,651	1,243,366,651	—	—
Stock Warrants	371,722	—	371,722	—
Total equity securities	5,737,921,517	5,736,973,810	947,707	—
Alternative investments				
Real Estate Funds	700,170	—	—	700,170
Total alternative investments	700,170	—	—	700,170
Total investments by fair value level	\$ 8,756,057,136	\$ 5,736,973,810	\$ 3,018,383,156	\$ 700,170
Investments measured at the net asset value (NAV)				
Short Term Investment Funds	1,321,673,819			
Emerging Markets Small Cap Equity Mutual Funds	61,584,998			
Alternative investments				
Multi Strategy Hedge Funds	129,699,447			
Real Estate Funds	1,086,037,664			
Private Equity Funds	971,930,802			
Other Funds	7,077,318			
Total Investments measured at the NAV	3,578,004,048			
Total Investments measured at the fair value	\$12,334,061,184			
Plus: Cash held by Fund Managers	15,752,838			
Less: G/L on FX Transactions	(826,992)			
Less: Accrued Monthly Interest	(4,076,462)			
	<u>12,344,910,568</u>			
Investment derivative instruments				
Foreign Exchange Forward Contracts (liability)	(800,553)	—	(800,553)	—
Total investment derivative instruments	\$ (800,553)	\$ —	\$ (800,553)	\$ —

Equity securities classified in Level 1 of the fair value hierarchy are valued using quoted prices in active markets for identical securities as of the measurement date as issued by pricing vendors. Securities classified in Level 2 of the fair value hierarchy include valuations using quoted prices for a similar security in active markets, and valuations from various pricing vendors/brokers using observable inputs other than quoted prices for identical securities.

Debt securities classified in Level 2 of the fair value hierarchy are valued using observable inputs other than quoted prices for identical securities. The prices are determined by the use of matrix pricing techniques maintained by various pricing vendors/brokers for these securities. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices.

Real estate funds classified in Level 3 of the fair value hierarchy are real estate alternative investments that invest primarily in overseas commercial real estate. These are investments which quoted prices are not readily available and are valued at estimated values as determined by the

General Partner (GP). Investments are valued by the GP using one or more valuation methodologies with reference to the International Private Equity and Venture Capital Valuation Guidelines. The estimated fair values are subjective and based on judgment.

SDRS holds shares or interest in investments where the fair value of the investments are measured on a recurring basis using net asset value per share (or its equivalent) of the investment as a practical expedient. The NAV valuations are based on valuations of the underlying companies as determined and reported by the fund manager or general partner.

Derivative instruments classified in Level 2 of the fair value hierarchy are valued using observable inputs other than quoted prices for identical securities. The foreign currency forward contract valuations are determined by interpolating FX rates for various settlement dates as of June 30, 2019.

BASIC FINANCIAL STATEMENTS (CONTINUED)

The valuation method for investments measured at the net asset value (NAV) per share (or its equivalent) is presented in the following table:

<u>Investments Measured at the NAV</u>				
	<u>Fair Value</u>	<u>Unfunded Commitments</u>	<u>Redemption Frequency (if currently eligible)</u>	<u>Redemption Notice Period</u>
Short-Term Investment Funds (a)	\$1,321,673,819		Daily	0 days
Emerging Markets Small Cap Equity Mutual Funds (b)	61,584,998		Daily	1 day
Alternative investments				
Multi Strategy Hedge Funds (c)	129,699,447		Monthly	5-30 days
Real Estate Funds (d)	1,086,037,664	\$948,075,767		
Private Equity Funds (e)	971,930,802	531,578,748		
Other Funds (f)	7,077,318			
Investments measured at the net asset value (NAV)	<u>\$3,578,004,048</u>			
Real Estate Funds (Level 3)	\$ 700,170	\$ —		

- a) Short-Term Investment Funds. This type includes investments in four open-end mutual funds that invest exclusively or primarily in high-quality, short-term securities that are issued or guaranteed by the U.S. government or by U.S. government agencies and instrumentalities. The fair values of the investments in this type have been determined using the NAV per share of the investments.
- b) Emerging Markets Small Cap Equity Mutual Funds. This type includes one investment in an open-end mutual fund that emphasizes broad diversification and consistent exposure to emerging market small company stocks. The fair value of the investment in this type has been determined using the NAV per share of the investment.
- c) Multi-Strategy Hedge Funds. This type includes two investments in funds that may invest in a wide range of asset classes in order to meet fund objectives. The fair values of the investments in this type have been determined using the NAV per share of the investments.
- d) Real Estate Funds. This type includes 26 real estate funds that invest primarily in commercial real estate. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the portfolio's ownership interest in partners' capital. These investments can never be redeemed from the funds. Distributions from each fund will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the funds will be liquidated over the next 20 years. Because it is not probable that any individual investment will be sold, the fair value of each individual investment has been determined using the NAV per share (or its equivalent) of the portfolio's ownership interest in partners' capital.
- e) Private Equity Funds. This type includes 36 private equity funds that invest primarily in leveraged buyouts. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the portfolio's ownership interest in partners' capital. These investments can never be redeemed from the funds. Distributions from each fund will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the funds will be liquidated over the next 20 years. Because it is not probable that any individual investment will be sold, the fair value of each individual investment has been determined using the NAV per share (or its equivalent) of the portfolio's ownership interest in partners' capital.
- f) Other Funds. This type includes two other alternative investments that invest primarily in the broad range of debt, debt-related, and/or real estate-related investments. The fair values of the investment has been determined using the NAV per share (or its equivalent) of the portfolio's ownership interest in partners' capital. This investment can never be redeemed from the funds. Distributions from the fund will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the fund will be liquidated over the next 5 years. Because it is not probable that any individual investment will be sold, the fair value of each individual investment has been determined using the NAV per share (or its equivalent) of the portfolio's ownership interest in partners' capital.

6) Derivatives

Derivatives are generally defined as contracts whose values depend on, or derive from, the value of an underlying asset, reference rate, or index. SDRS is exposed to various derivative products through the investment management of the SDIC and its external managers. All of the SDRS's derivatives are classified as investment derivatives.

Futures Contracts

A futures contract is a contract to buy or sell units of an index or financial instrument at a specified future date at a price agreed upon when the contract is originated. The South

Dakota Investment Council purchases and sells futures contracts as a means of adjusting the SDRS portfolio mix at a lower transaction cost than the transactions, which would otherwise occur in the underlying portfolios. During fiscal year ended June 30, 2019, S&P 500 futures and 10-year U.S. Treasury note futures were utilized. Upon entering into such a contract, SDRS pledges to the broker cash or U.S. government securities equal to the minimum initial margin requirement of the futures exchange. Additionally, SDRS receives or pays a daily variation margin, which is an amount of cash equal to the daily fluctuation in value of the contract. The change in fair value of the futures contracts is presented in the statement of changes in fiduciary net position as "Net appreciation in fair value of investments." The net change in fair value from futures contracts for fiscal year ended June 30, 2019, was \$134,120,946.

Futures contract positions at June 30, 2019, were as follows:

<u>Description</u>	<u>Expiration Date</u>	<u>Open position</u>	<u>Number of contracts</u>	<u>Notional contract size</u>	<u>Fair value</u>
U.S. Treasury note	Sept 2019	Long	4,325	100,000 par value 6%, 10-year U.S. Treasury note	\$553,464,844
S&P 500 Index	Sept 2019	Short	11,185		\$(1,646,571,813)

Foreign Currency Forward Contracts

The SDIC enters into foreign exchange forward contracts for SDRS to manage foreign currency exposure, as permitted by portfolio policies. The fair values of the contracts are presented in the Statement of Fiduciary Net Position as Investments, at fair value—Equities. The change in fair value of the forward contracts is presented in the statement of changes in fiduciary net position as "Net appreciation in fair value of investments." The net change in fair value from foreign currency forward contracts for fiscal year ended June 30, 2019, was \$420,894. At June 30, 2019, the foreign currency forward contracts outstanding were as follows:

<u>Description</u>	<u>Notional amount</u>	<u>Currency</u>	<u>Maturity date</u>	<u>Fair value (US dollars)</u>
Forward sale	\$ (20,770,519)	CHF	8/7/2019	\$ (800,553)

a) Credit Risk

SDRS is exposed to credit risk on derivative instruments that are in asset positions. The SDIC attempts to minimize credit risk by entering into derivatives contracts with major financial institutions. At June 30, 2019, the net fair value of foreign currency forward contracts was \$0. This represents the maximum loss that would be recognized at the reporting date if all counterparties failed to perform as contracted.

b) Foreign Currency Risk

SDRS is exposed to foreign currency risk on its foreign currency forward contracts because they are denominated in foreign currencies. The net fair value of the foreign currency forward contracts in U.S. dollars is \$(800,553).

7) Compensated Absences

Annual leave is earned by all SDRS employees. Upon termination, SDRS employees are eligible to receive compensation for their accrued annual leave balances. At June 30, 2019, a liability existed for accumulated annual

leave calculated at the employees' June 30, 2019, pay rate in the amount of \$189,711. Employees who have been continuously employed by SDRS and the State for at least seven years prior to the date of their retirement, voluntary resignation, or death will receive payment for one-fourth of their accumulated sick leave balance with such payment not to exceed the sum of 12 weeks of the employee's annual compensation. For employees who have not been employed for seven continuous years, an accrued liability is calculated assuming the likelihood that they will meet the seven-year threshold in the future. At June 30, 2019, a liability existed for accumulated and accrued sick leave, calculated at the employees' June 30, 2019, pay rate in the amount of \$192,603.

	2019	2018	% change
Total compensated absences	\$382,314	\$334,962	14.14%

The total leave liability for the current year is on the statement of fiduciary net position available for benefits in accounts payable and accrued expenses.

8) Operating Leases

The SDRS has entered into an agreement to lease office space effective September 2012 and has a term of ten years. A schedule of minimum office rental payments as of June 30, 2019, is as follows for the fiscal years ending June 30:

2020	\$ 112,279
2021	112,279
2022	112,279
Total remaining minimum payments	<u>\$ 336,837</u>

Lease expense for the year ending June 30, 2019, was \$112,279.

9) Supplemental Retirement Plan

SDRS offers a deferred compensation plan known as the Supplemental Retirement Plan (SRP), created in accordance with Internal Revenue Code Section 457. SRP is available to all public employees and permits them to defer a portion of their salary until future years. The deferred compensation is not available to employees until termination, retirement, death, or unforeseen emergency.

All amounts of compensation deferred under the SRP, all property and rights purchased with those amounts, and all income attributable to those amounts, property, or rights are at all times held in trust for the exclusive benefit of the participants until made available to a participant or the participant's beneficiary.

Of the \$413,824,990 net position restricted for plan benefits at June 30, 2019, \$247,992,462 was held in trust for employees of the State, while the remaining \$165,832,528 represents the assets held in trust for employees of other jurisdictions. In order to avoid duplication in reporting, the SDRS total of \$2,474,143 is included in the State total and the State's comprehensive annual financial report for the year ended June 30, 2019.

10) Special Pay Plan

The Special Pay Plan (SPP) was established in July 2004 as a qualified plan pursuant to Internal Revenue Code Section 401(a) under the administrative responsibility of the SDRS Board of Trustees. South Dakota state government and the South Dakota Board of Regents are participating units and every state political subdivision may become a participating unit in the plan. The SPP mandates that qualifying employees (over age 55 and \$600 or more in special pay) of participating units defer 100 percent of their special lump-sum termination pay to the plan. The participating unit transfers the deferred pay to the fund. This deferred pay is available to a participant immediately after termination, upon later retirement, or to beneficiaries or an estate upon the participant's death.

Of the \$60,872,370 net position restricted for plan benefits at June 30, 2019, \$33,148,491 was held in trust for employees of the State, while the remaining \$27,723,879 represents the assets held in trust for employees of other jurisdictions. In order to avoid duplication in reporting, the SDRS total of \$39,989 is included in the State total and the State's comprehensive annual financial report for the year ended June 30, 2019.

11) Plan Termination

SDRS is administered in accordance with South Dakota statutes. The statutes provide for full vesting in accrued benefits upon termination of the plan (SDCL 3-12C-221).

12) Commitments

At June 30, 2019, SDRS had uncalled capital commitments to private equity limited partnerships totaling approximately \$734,070,785 and to real estate limited partnerships totaling approximately \$1,577,675,767. The commitments may be called at the discretion of the general partner or may never be called.

13) Litigation

Deutsche Bank and Wilmington Trust Company have filed a number of actions around the country against selling shareholders, and those actions are all now consolidated in a Multi District Panel proceeding in the Southern District of New York (In re: Tribune Company Fraudulent Conveyance Litigation, Case No. 11-MD-2296). A separate adversary proceeding which was pending in Delaware has been consolidated into this action as well (The Official Committee of Unsecured Creditors of Tribune Company, on behalf of Tribune Company v. Dennis J. Fitzsimmons, et al., Case No. 1:12-cv-02652). SDRS is a defendant as a result of selling Tribune Stock in connection with a leveraged buyout of the Tribune Company in 2007. Through this lawsuit the creditors of Tribune Company are attempting to claw-back funds received in connection with the sale of the stock, which, in the case of SDRS, is approximately four million dollars. Claims against the former Tribune shareholders have been dismissed. The

BASIC FINANCIAL STATEMENTS (CONTINUED)

Noteholder litigation was dismissed in 2013 and affirmed by the Second Circuit. The Noteholders sought review by the U.S. Supreme Court and the Court has still not agreed to take it up.

The FitzSimmons litigation was dismissed in January 2017 and although the Plaintiff has now sought leave to amend the complaint, that request was previously rejected by the Court in February 2017. On July 12, 2019, the Plaintiff filed a notice of appeal. The pending legal action does not represent an immediate negative contingency.

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in the System's Net Pension Liability (Asset) Last Fiscal Year

	2019	2018	2017	2016	2015	2014
Total pension liability						
Service cost	\$ 233,802,396	\$ 222,709,592	\$ 192,682,191	\$ 184,923,317	\$ 179,349,820	\$ 161,697,696
Interest	791,288,656	752,702,794	781,413,919	745,774,586	712,632,857	633,951,211
Changes in benefit terms	—	—	(567,079,980)	—	—	(5,082,771)
Differences between expected and actual experience	(6,190,846)	5,220,615	97,593,700	78,645,840	55,821,847	78,328,269
Changes of assumptions	(193,660,111)	181,931,669	820,191,401	—	—	604,281,184
Cement Plant consolidation	—	—	—	—	—	60,649,185
Benefit payments, including refunds	(596,424,723)	(564,141,147)	(541,090,032)	(510,496,482)	(482,494,871)	(450,490,712)
Net change in total pension liability	\$ 228,815,372	\$ 598,423,523	\$ 783,711,199	\$ 498,847,261	\$ 465,309,653	\$ 1,083,334,062
Total pension liability—beginning	<u>12,233,387,024</u>	<u>11,634,963,501</u>	<u>10,851,252,302</u>	<u>10,352,405,041</u>	<u>9,887,095,388</u>	<u>8,803,761,326</u>
Total pension liability—ending	<u>\$12,462,202,396</u>	<u>\$12,233,387,024</u>	<u>\$11,634,963,501</u>	<u>\$ 10,851,252,302</u>	<u>\$10,352,405,041</u>	<u>\$ 9,887,095,388</u>
Plan fiduciary net position						
Contributions—employer	127,572,348	124,734,270	121,907,646	114,090,075	109,549,977	104,952,985
Contributions—member	127,454,956	124,262,387	122,144,961	114,443,295	110,152,580	106,175,381
Net investment income	583,573,718	911,695,475	1,431,977,414	22,836,265	435,682,659	1,695,543,796
Benefit payments, including refunds	(596,424,723)	(564,141,147)	(541,090,032)	(510,496,482)	(482,494,871)	(450,490,712)
Administrative expense	(5,095,897)	(4,870,334)	(4,363,512)	(3,944,641)	(3,911,222)	(3,853,073)
Cement Plant consolidation	—	—	—	—	—	69,519,407
Net change in plan fiduciary net position	237,080,402	591,680,651	1,130,576,477	(263,071,488)	168,979,123	1,521,847,784
Plan fiduciary net position—beginning	<u>12,235,719,255</u>	<u>11,644,038,604</u>	<u>10,513,462,127</u>	<u>10,776,533,615</u>	<u>10,607,554,492</u>	<u>9,085,706,708</u>
Plan fiduciary net position—ending	<u>\$12,472,799,657</u>	<u>\$12,235,719,255</u>	<u>\$11,644,038,604</u>	<u>\$10,513,462,127</u>	<u>\$10,776,533,615</u>	<u>\$10,607,554,492</u>

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, pension plans should present information for those years in which information is available.

Schedule of System's Net Pension Liability (Asset) Last Fiscal Year

	2019	2018	2017	2016	2015	2014
Total pension liability	\$12,462,202,396	\$12,233,387,024	\$11,634,963,501	\$ 10,851,252,302	\$ 10,352,405,041	\$ 9,887,095,388
Plan fiduciary net position	<u>12,472,799,657</u>	<u>12,235,719,255</u>	<u>11,644,038,604</u>	<u>10,513,462,127</u>	<u>10,776,533,615</u>	<u>10,607,554,492</u>
System's net pension liability (asset)	<u>\$ (10,597,261)</u>	<u>\$ (2,332,231)</u>	<u>\$ (9,075,103)</u>	<u>\$ 337,790,175</u>	<u>\$ (424,128,574)</u>	<u>\$ (720,459,104)</u>
Plan fiduciary net position as a percentage of the total pension liability	100.09%	100.02%	100.08%	96.89%	104.10%	107.29%
Estimated covered payroll during year	\$2,048,204,895	\$2,001,885,527	\$1,954,735,217	\$1,829,641,009	\$1,758,315,755	\$1,685,627,785
System's net pension liability (asset) as a percentage of covered payroll	-0.517%	-0.117%	-0.464%	18.462%	-24.121%	-42.741%

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, pension plans should present information for those years in which information is available.

See Notes to Required Supplementary Information.

REQUIRED SUPPLEMENTARY INFORMATION (CONTINUED)

Schedule of System's Contributions Last Fiscal Year

	2019	2018	2017	2016	2015	2014
Actuarially determined contribution	\$ 127,572,348	\$ 124,734,270	\$ 121,907,646	\$ 114,090,075	\$ 109,549,977	\$ 103,483,647
Contributions in relation to the actuarially determined contribution	<u>127,572,348</u>	<u>124,734,270</u>	<u>121,907,646</u>	<u>114,090,075</u>	<u>109,549,977</u>	<u>104,952,985</u>
Contribution deficiency (excess)	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ (1,469,338)</u>
Reported covered payroll	\$2,048,204,895	\$2,001,885,527	\$1,954,735,217	\$1,829,641,099	\$1,758,315,755	\$1,685,627,785
Contributions as a percentage of covered payroll	6.228%	6.231%	6.237%	6.236%	6.230%	6.226%

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, pension plans should present information for those years in which information is available.

Schedule of Investment Returns Last Fiscal Year

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Annual money-weighted rate or return, net of investment expenses	4.84%	7.95%	13.84%	0.21%	4.17%	18.91%	19.01%	1.37%	25.27%	18.20%
Annual time-weighted rate or return, net of investment expenses	4.88%	7.94%	13.81%	0.30%	4.18%	18.90%	19.02%	1.45%	25.18%	17.99%

See Notes to Required Supplementary Information.

Methods and assumptions used in calculations of actuarially determined contributions. The actuarially determined contribution rates in the schedule of System's contributions are calculated as of July 1, two years prior to the end of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine contribution rates reported in that schedule:

Notes to Trend Data

Valuation date	June 30, 2019
Amortization method	Level percentage of pay
Actuarial cost method	Entry age normal
Remaining amortization period	0 years
Asset valuation method	Effective with the June 30, 2017 valuation, the actuarial value of assets is equal to the fair value of assets
Actuarial assumptions:	
Investment rate of return	6.50%
Projected salary increases	6.50% at entry to 3.00% after 25 years of service
Future COLAs	1.88%
Post-retirement mortality table:	
Active members	97% of RP-2014, adjusted to 2006 and projected generationally with Scale MP-2016, white collar rates for females and total dataset rates for males
Healthy inactive members, retired members and beneficiaries	97% of RP-2014, adjusted to 2006 and projected generationally with Scale MP-2016, white collar rates for females and total dataset rates for males
Disabled inactive and retired members	RP-2014 Disabled Mortality Table, adjusted to 2006 and projected generationally with Scale MP-2016

OTHER SUPPLEMENTARY INFORMATION

Schedule of Administrative Expenses Year Ended June 30, 2019

Personal services	Accrual Basis
Salary and per diem	\$2,007,883
Employee benefits	531,037
Total personal services	<u>2,538,920</u>
Operating expenses	
Travel	100,493
Contractual services:	
Audit	123,740
Finance	2,445
Valuations	19,587
Special studies	95,031
Legal	29,046
Communications	65,434
Operations	1,397,258
Total contractual services	<u>1,732,541</u>
Supplies and materials	430,450
Capital assets	293,493
Total operating expenses	<u>2,556,977</u>
Total administrative expenses	<u>\$5,095,897</u>

Schedule of Investment Activity Expenses Year Ended June 30, 2019

Investment managers	Management expenses
State of South Dakota Investment Council	\$11,266,588
Blackstone Private Equity	3,063,733
Blackstone Real Estate Partners	5,982,270
Brandes Global Mid-Cap	582,578
Brookfield Real Estate	1,429,505
Capital International	667,845
Carlyle	359,899
Cinven	2,517,788
CVC	2,199,630
Doughty Hanson & Co. European Real Estate	(63,927)
Doughty Hanson PE	91,360
Elevation Partners	5,592
EnCap Energy	753,074
KKR Associates	11,356
Lone Star Real Estate	5,436,216
Riverstone	3,312,914
Rockpoint Real Estate	4,024,122
Sanders All Asset Value	407,021
Sanders Capital	335,528
Silver Lake Partners LP	2,702,182
Starwood Real Estate	1,914,677
TCW Opp MBS Strategy	<u>3,977,823</u>
Total investment activity expenses	<u>\$50,977,774</u>



CPAs & BUSINESS ADVISORS

Independent Auditor's Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with Government Auditing Standards

To the Board of Trustees
South Dakota Retirement System
Pierre, South Dakota

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the South Dakota Retirement System (SDRS), as of and for the year ended June 30, 2019, and the related notes to the financial statements, and have issued our report thereon dated November 6, 2019.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered SDRS's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of SDRS's internal control. Accordingly, we do not express an opinion on the effectiveness of the SDRS's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether SDRS's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

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Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.



Boise, Idaho
November 6, 2019

ACTUARIAL SUMMARY



Actuary's Opinion
Actuarial Overview
Actuarial Valuation
Solvency Test
Schedule of Active Member Valuation Data
Schedule of Retirees and Beneficiaries Added to and Removed from Benefit Payroll
Comparison of Actuarial Valuation Results
Plan Summary

ACTUARY'S OPINION

South Dakota Retirement System
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South Dakota Retirement System

October 18, 2019

Board of Trustees
South Dakota Retirement system
Post Office Box 1098
Pierre, SD 57501-1098

Dear Trustees:

I am pleased to submit the results of the annual Actuarial Valuation of the South Dakota Retirement System (SDRS), prepared as of June 30, 2019.

The purposes of this report are to:

- Determine if the funded status of SDRS is at least 100% assuming future COLAs are equal to the baseline COLA assumption of 2.25% and if not, to determine the restricted maximum COLA that results in a funded status of 100%
- Determine the 2020 SDRS COLA as defined in South Dakota Codified Law (SDCL)
- Determine the funded status of SDRS as of June 30, 2019
- Confirm that the fixed, statutory Member and Employer contributions are the Actuarially Determined Contributions (ADC)
- Determine if Corrective Action recommendations are required to be made to the Retirement Laws Committee in accordance with SDCL 3-12-C228
- Provide accounting information under Governmental Accounting Standards Board Statements No. 67 and 68 (GASB 67 and 68)
- Identify, assess, and disclose risks to future SDRS funding.

This Actuarial Valuation is based on financial and Member data provided by SDRS internal audit staff and summarized in this report. I did not audit the data submitted, but did perform tests for consistency and reasonableness.

All Members of participating employer units of SDRS and all benefits in effect on June 30, 2019, have been considered in this Actuarial Valuation. SDRS benefit provisions, Member data, and trust information are summarized in the sections that follow. No adjustments for events after the June 30, 2019, measurement date have been included.

The actuarial assumptions and methods used in this valuation meet the parameters set by the Actuarial Standards of Practice maintained by the Actuarial Standards Board for assessing the funded status of SDRS. The assumptions and methods used to determine the ADC as outlined in this report and all supporting schedules meet the parameters and requirements for disclosure of GASB 67. All SDRS benefits are included in the determination of the ADC that is developed using the Entry Age actuarial cost method. The Actuarial Value of Assets is equal to the Fair Value of Assets. The undersigned believes the assumptions are, individually

and in the aggregate, reasonably related to experience and to expectations of future experience.

SDRS's Funding Policy establishes funding objectives necessary for the management of SDRS based on fixed, statutory Member and Employer contributions. The Funding Policy objectives include:

- Fair Value Funded Ratio (FVFR) of at least 100%
- A fully funded System based on the Fair Value of Assets and the Entry Age Normal Cost method
- Actuarially determined benefits that are supported by the fixed, statutory Member and Employer contributions

The results of this valuation indicate that as of June 30, 2019, SDRS continues to be a very well-funded system with a Fair Value Funded Ratio of 100.1%. The actuarially determined benefits are supported by the fixed, statutory Member and Employer contributions.

Future actuarial results may differ significantly from current measurements presented in this report due to such factors as plan experience differing from that anticipated by the economic and demographic assumptions, changes in economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. Due to the limited scope of this report, an analysis of the potential range of such future measurements has not been performed.

The results herein are appropriate for evaluating the ability of accumulated assets and future contributions to fund SDRS benefits, but make no assessment regarding the funded status of the System if the System were to settle (i.e. purchase annuities for) a portion or all of its liabilities. In various places in this report, Funded Ratios and liabilities are shown based upon varying sets of assumptions as is required for certain disclosure information per accounting rules or South Dakota Law. Where this has been done it has been clearly indicated.

The undersigned is an Enrolled Actuary, an Associate of the Society of Actuaries, a Member of the American Academy of Actuaries and a Fellow of the Conference of Consulting Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. He is an employee of SDRS and is available to answer any questions on the material contained in the report or to provide explanations or further details as may be appropriate.

This report has been prepared in accordance with all applicable Actuarial Standards of Practice. The undersigned believes all actuarial assumptions and methods used to develop the following results were reasonable and appropriate.

The undersigned actuary prepared the following schedules included in the Actuarial Section of the CAFR:

- Measures of Actuarial Soundness
- Summary of Key Actuarial Measures
- Actuarial Liability Gains and Losses
- Actuarial Assumption Tables
- Summary of Funded Ratios and Funding Periods

ACTUARY'S OPINION (CONTINUED)

- Summary of Actuarial Accrued Liability and Unfunded Actuarial Accrued Liability
- Solvency Test
- Schedule of Active Member Valuation Data
- Schedule of Retirees and Beneficiaries Added to and Removed from Benefit Payroll
- Comparison of Actuarial Valuation Results

Respectfully submitted,



Douglas J. Fiddler, ASA, EA, MAAA, FCA
Senior Actuary
South Dakota Retirement System

Note: Use of this report for any other purposes or by anyone other than the Board of Trustees and SDRS staff may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions or methods or the inapplicability of this report for other purposes. The attached pages should not be provided without a copy of this cover letter. Because of the risk of misinterpretation of actuarial results, you should ask the report's author to review any statement you wish to make on the results contained in this report.

EXTERNAL ACTUARIAL REVIEW LETTER OF TRANSMITTAL



Cavanaugh Macdonald CONSULTING, LLC

The experience and dedication you deserve

November 22, 2019

Board of Trustees
South Dakota Retirement System
Post Office Box 1098
Pierre, SD 57501-1098

Dear Board of Trustees:

Cavanaugh Macdonald Consulting, LLC has performed an independent review of the June 30, 2019 actuarial valuation of the South Dakota Retirement System. As an independent reviewing or auditing actuary, we have been asked to:

- Assess the available data for the preparation of the valuation, the degree to which such data is sufficient to support the valuation conclusions, and the use and appropriateness of any assumptions made regarding the data.
- Comment on actuarial assumptions, funding methods, and procedures used in the valuation.
- Independently replicate the detailed valuation results using the actuarial assumptions, funding methods, and procedures used in the actuarial valuation.
- Reconcile discrepancies between the results determined by the internal Senior Actuary and the results determined by Cavanaugh Macdonald. SDRS intends that, to the extent possible, discrepancies be communicated and resolved with the internal Senior Actuary prior to the completion of the valuation so that adjustments and recommendations may be considered for inclusion in the final valuation report.
- Review the internal Senior Actuary's report for compliance with applicable Actuarial Standards of Practice and Governmental Accounting Standards Board Statements No. 67 and 68.

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EXTERNAL ACTUARIAL REVIEW LETTER OF TRANSMITTAL

Board of Trustees
November 22, 2019
Page 2



Our analysis of the actuarial assumptions and methods was based largely on the most recent experience study covering the time period from July 1, 2011 through June 30, 2016 and implemented effective with the June 30, 2017 actuarial valuation. Our opinion on the valuation results was based on a replication valuation of the June 30, 2019 actuarial valuations. We would like to thank Doug Fiddler, the SDRS Senior Actuary, for his cooperation and assistance in providing the required information to us in a timely manner. **We find the actuarial valuation results to be reasonable and accurate based on the actuarial assumptions and methods used. The valuation was performed by a qualified actuary and was performed in accordance with the principles and practices prescribed by the Actuarial Standards Board.** This report documents the detailed results of our review.

If you need anything else, please do not hesitate to give us a call. The undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report.

Sincerely,

A handwritten signature in blue ink, appearing to read 'LL'.

Larry Langer, ASA, FCA, MAAA, EA
Principal and Consulting Actuary

A handwritten signature in blue ink, appearing to read 'Patrice Beckham'.

Patrice A. Beckham, FSA, FCA, MAAA, EA
Principal and Consulting Actuary

The Actuarial Valuation is a snapshot of the funded position of SDRS, performed each June 30 for the following purposes:

- To determine:
 - if the funded status is at least 100 percent assuming future COLAs are equal to the baseline COLA assumption of 2.25 percent, and
 - if it is less than 100 percent, the restricted maximum COLA that results in a funded status of 100 percent assuming future COLAs are equal to the restricted maximum;
- To set the COLA paid at the beginning of the following fiscal year based on the rate of inflation for the prior year and the funded status determinations;
- To review the current funded status of SDRS;
- To disclose the System assets and liability measures as of the valuation date;
- To confirm the fixed, statutory Member and Employer contributions are the Actuarially Determined Contributions;
- To determine if a recommendation for Corrective Actions is required to be made to the Retirement Laws Committee, in accordance with statutory requirements;
- To compare actual and expected experience under SDRS during the most recent fiscal year;
- To disclose the accounting measures as required by GASB Statement Nos. 67 and 68 as of the end of the fiscal year;
- To report trends in contributions, assets, liabilities, and funded status;
- To identify, assess, and disclose risks to future SDRS funding.

This June 30, 2019 Actuarial Valuation is the thirty-fourth Actuarial Valuation of SDRS since consolidation in 1974. It is based on the statutory plan provisions, membership, assets and actuarial assumptions as of the valuation date.

The actuarial accrued liability (AAL) is the Present Value of All Benefits less the Present Value of Future Normal Cost Contributions required for future benefits for SDRS Members and paid from future Member and Employer Contributions. It is the portion of the Present Value of All Benefits assigned to prior periods by the Entry Age Normal Cost Method.

Two measurements of the funded ratio are calculated each year. The actuarial value funded ratio (AVFR) is equal to the actuarial value of assets divided by the AAL. The fair value funded ratio (FVFR) is equal to the fair value of assets divided by the AAL. A ratio in excess of 100 percent indicates that the AAL is fully funded. The actuarial value of assets is equal to the fair value of assets. As a result, the AVFR will be equal to the FVFR.

The funding period measures the length of time required to amortize unfunded actuarial accrued liabilities as well as pay the on-going normal costs, interest charges and expenses with the current contributions. The shorter the funding period, the more favorable the actuarial measure. In accordance with the Board of Trustees' funding policy objectives, the unfunded actuarial accrued liability has been \$0 since June 30, 2013, and no funding period is applicable.

Purpose of the Actuarial Valuation

Actuarial Accrued Liability

Funded Ratio

Funding Period

ACTUARIAL OVERVIEW (CONTINUED)

Changes from Prior Valuation

The June 30, 2019 Actuarial Valuation reflects no changes in actuarial assumptions, actuarial methods, or plan provisions from the June 30, 2018 Actuarial Valuation with one exception. When the Baseline Fair Value Funded Ratio is less than 100 percent, assumed future COLAs are equal to the restricted maximum COLA which depends on the funded status of the plan and may change each year. The restricted maximum COLA decreased from 2.03 percent to 1.88 percent due to actuarial losses during fiscal year 2019. The details of the changes are outlined below. The net impact of the changes was a decrease of \$194 million in the Actuarial Accrued Liability.

SDRS Benefit Provision Changes

No changes in benefit provisions were made since the prior valuation.

SDRS Actuarial Assumption Changes

Legislation enacted in 2017 modified the SDRS COLA. For COLAs first applicable in 2018, the SDRS COLA will equal the percentage increase in the most recent third calendar quarter CPI-W over the prior year, no less than 0.5 percent and no greater than 3.5 percent. However, if the FVFR assuming the long-term COLA is equal to the baseline COLA assumption (currently 2.25 percent) is less than 100 percent, the maximum COLA payable will be limited to the increase that if assumed on a long-term basis, results in a FVFR equal to or exceeding 100 percent. That condition existed as of June 30, 2018, and exists again this year as of June 30, 2019. Future COLAs are assumed to equal the current restricted maximum COLA which was 2.03 percent as of June 30, 2018, and is 1.88 percent as of June 30, 2019.

The changes in actuarial assumptions decreased the Actuarial Accrued Liability by \$194 million, or 1.5 percent of the Actuarial Accrued Liability based on the 2.03 percent COLA, reflecting the current and assumed future restricted maximum COLA of 1.88 percent.

Actuarial assumptions are reviewed in depth periodically, with the next experience analysis anticipated before the June 30, 2022 Actuarial Valuation and any recommended changes anticipated to be first implemented in the June 30, 2022 Actuarial Valuation.

SDRS Actuarial Method Changes

No changes in actuarial methods were made since the prior valuation.

Two changes were made to actuarial methods used for accounting information which result in a small difference between the Total Pension Liability (TPL) and the Actuarial Accrued Liability (AAL). The AAL for the Variable Retirement Account (VRA) of Generational Members is equal to the total accumulated VRO balances for active and terminated vested members and the Normal Cost for the VRA is equal to 1.5 percent (the percentage of pay credited to the VRA) times projected Generational salaries. The TPL and Service Cost for the VRA for accounting purposes are calculated following the Individual Entry Age Actuarial Cost Method.

In addition, the AAL for former Cement Plant Retirement Plan members is equal to the Present Value of their frozen accrued benefits and these members are assumed to have no Normal Cost. The TPL and Service Cost presented for former Cement Plant Retirement Plan members are also calculated following the

Individual Entry Age Actuarial Cost Method.

The Board of Trustees' Funding Policy objectives are designed to manage SDRS based on the fixed, statutory Member and Employer contributions. The objectives included a Fair Value Funded Ratio of at least 100 percent, a fully funded System, and actuarially determined benefits that are variable and are supported by the fixed, statutory contributions. These objectives are currently met as no Unfunded Actuarial Accrued Liability currently exists and the Fair Value Funded Ratio is 100.1 percent as of June 30, 2019.

Based on the current Funded Ratios, the SDRS Funding Policy, fixed statutory contribution rates, and future experience matching the actuarial assumptions detailed in this report, the Fair Value Funded Ratio is expected to remain 100 percent of greater.

The current restricted maximum COLA of 1.88 percent is expected to remain stable in the absence of unexpected future gains or losses.

Legislation enacted in 2017 modified the SDRS COLA. For COLAs first applicable in 2018, the SDRS COLA will equal the percentage increase in the third calendar quarter average CPI-W for the plan year, no less than 0.5 percent and no greater than 3.5 percent. However, if the fair value funded ratio (FVFR) assuming the future COLAs are equal to the baseline COLA assumption (currently 2.25 percent) is less than 100 percent, the maximum COLA payable will be limited to the increase that if assumed for future COLAs, results in a FVFR equal to or exceeding 100 percent.

As of June 30, 2019, the FVFR assuming future COLAs are equal to the baseline COLA assumption is 96.3 percent. Assuming future COLAs are 1.88 percent results in a FVFR of 100.1 percent. As a result, the 2020 SDRS COLA will therefore be the increase in the third calendar quarter average CPI-W, no less than 0.5 percent and no greater than 1.88 percent. The increase in the third calendar quarter average CPI-W for 2019 was 1.56 percent, therefore the July 2020 monthly benefits will be increased by the CPI-W increase of 1.56 percent.

SDCL 3-12C-228 requires the SDRS Board of Trustees to recommend corrective actions to the Retirement Laws Committee if either of two conditions are not satisfied. The two conditions are a fair value funded ratio (FVFR) of at least 100 percent and fixed, statutory contributions sufficient to fund the minimum SDCL 3-12C-228 requirements. As of June 30, 2019, the FVFR, based on the restricted maximum COLA of 1.88 percent, is 100.1 percent. Also as of June 30, 2019, the statutory contribution rate is 12.416 percent and the SDCL 3-12C-228 minimum requirement is 11.710 percent. Because both conditions are satisfied as of June 30, 2019, no corrective action recommendation is required.

The determination of the affordable COLA, the funded status and the adequacy of the statutory contributions to SDRS are the most important indicators of the long-term actuarial soundness of SDRS. The soundness is measured by:

- The maximum SDRS COLA payable the following July 1 and assumed for future years

SDRS Actuarial Valuation Results and Implications of SDRS' Funding Policy

Statutory Determinations: COLA

Statutory Determinations: Satisfying Conditions of SDCL 3-12C-228

Actuarial Soundness

ACTUARIAL OVERVIEW (CONTINUED)

- The fair value funded ratio
- The adequacy of the total fixed, statutory contributions available

As of the June 30, 2019 valuation date, the restricted maximum COLA is 1.88 percent, the FVFR is 100 percent and the unfunded actuarial accrued liability remains at \$0.

If future experience meets expectations, the FVFR is expected to remain at 100 percent and the restricted maximum COLA is expected to remain constant at the current 1.88 percent.

Future events such as adverse investment returns, increases in life expectancies greater than assumed, or other demographic losses may result in reductions in the restricted maximum COLA and, if severe enough, may adversely impact the future funded status of SDRS and require corrective action recommendations.

Corrective action recommendations are required if the Fair Value Funded Ratio is less than 100 percent. That condition does not exist currently. If it exists in the future, SDRS is expected to have unfunded actuarial accrued liabilities only as a temporary condition until legislation can be enacted in the following Legislative Session to meet the requirements of SDCL 3-12C-228.

The combination of actuarial assumptions and methods used in the Actuarial Valuation, the actual experience of the System, and the actuarial measures determined in this report all indicate a continuing sound System.

Measures of Actuarial Soundness

	2019 actuarial valuation	2018 actuarial valuation
Assumed Future COLAs	1.88%	2.03%
Actuarial value funded ratio (actuarial value of assets/AAL)	100.1%	100.0%
Fair value funded ratio (fair value of assets/AAL)	100.1%	100.0%
Funding period	N/A	N/A

Summary of Key Actuarial Measures

	2018 actuarial valuation results	System investment and liability experience for year ¹	Membership changes and maturity of system ²	Changes in benefit provisions, actuarial methods or actuarial assumptions effective July 1, 2017	2019 actuarial valuation results
Normal cost rate with expense provision	11.835%	—	0.097%	(0.222%) ³	11.710%
Funding period	N/A	—	—	—	N/A
Unfunded actuarial accrued liability	\$0	—	—	—	\$0
Actuarial value funded ratio	100.0%	(1.4%)	—	1.5% ³	100.1%
Fair value funded ratio	100.0%	(1.4%)	—	1.5% ³	100.1%

The time-weighted annualized investment performance based on the fair value of assets of the system for the most recent year was 4.88 percent after consideration of investment expenses. The money-weighted annualized investment performance based on the fair value of assets for the period was 4.84 percent after deducting investment expenses, less than the assumed rate of 6.50 percent for fiscal year 2019. This resulted in an actuarial investment loss of \$201 million.

Actuarial Investment Return Gains/Losses For the year ended June 30, 2019

	Amount of liability gain (loss)	Percentage of actuarial accrued liability
Gain due to compensation increases	\$39M	0.31%
Gain due to mortality	7M	0.06%
(Loss) due to terminations	(11M)	(0.11%)
(Loss) due to rehired and new members	(25M)	(0.20%)
Miscellaneous (Loss)	(4M)	(0.01%)
Total system Gain	\$6M	0.05%

Actuarial Liability Gains/Losses For the year ended June 30, 2019

SDRS member and employer contribution rates are fixed in statute and do not change based on experience. The SDRS COLA will vary between 0.5 percent and 3.5 percent based on inflation and the long-term affordability of the COLA, as indicated by a fair value funded ratio equal to or greater than 100 percent. Prior to 2017, the SDRS COLA varied from 2.1 percent to 3.1 percent based on funded status and inflation.

Actuarially Determined Contributions

To test the adequacy of the fixed contribution rates, an actuarially determined requirement is calculated based on the minimum annual statutory COLA payable (0.5 percent) and the maximum annual statutory COLA payable (3.5

¹ SDRS actuarial investment and liability gains and losses impact the actuarial and fair value funded ratios immediately.

² Changes to the membership from year to year will cause minor changes in the normal cost rate.

³ In years when a restricted maximum COLA applies, changes to the assumed future SDRS COLA that correspond to actuarial investment and liability experience will drive changes in the funded ratios and the normal cost rate.

ACTUARIAL OVERVIEW (CONTINUED)

percent) as of June 30, 2019. If the SDRS fixed contributions are within that range of actuarially determined requirements, they will support the SDRS benefit structure and reflect the minimum and maximum long-term costs of the system.

The June 30, 2019 actuarial valuation confirms that the actuarially determined contribution rate will be 100 percent of the statutory contribution rate for fiscal years 2019 and 2020.

Actuarial Cost Method

Liabilities and contribution shown in this report are computed using the Entry Age Actuarial Cost Method.

Sometimes called a “funding method,” this is a particular technique used by actuaries for establishing the amount and incidence of the annual actuarial cost of pension plan benefits, or Normal Cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan is comprised of (1) the Normal Cost and (2) an amortization payment on the Unfunded Actuarial Accrued Liability.

Under this Entry Age Actuarial Cost Method, the Normal Cost is computed as the percentage of pay which, if paid from the date of the Member’s entry into the System to each Member’s assumed retirement or termination, would accumulate with interest at the assumed rate of investment return to a fund sufficient to pay all benefits under the plan.

For inactive members, the Actuarial Accrued Liability is the present value of all benefits. For active members, the Actuarial Accrued Liability is the present value of all benefits less the present value of future normal costs. Normal cost and present value of future normal cost for active members is determined considering only the ongoing benefit formula, disregarding the historical benefit improvements for periods of past service which are thereby included in the Actuarial Accrued Liability.

The aggregate normal cost rate for SDRS is determined by taking aggregate present value of future normal costs for the membership group and dividing this result by the aggregate present value of total projected payroll of members before assumed retirement age. The normal cost rate is then adjusted by a half-year’s interest and multiplied by the total payroll for active members before assumed retirement to determine the Normal Cost. This procedure is performed for the group as a whole, not as the sum of individual Normal Cost calculations.

For the determination of the Actuarial Accrued Liability, Normal Cost, Actuarially Determined Contributions, and the statutory determination of the COLA and SDCL 3-12C-228 requirements, the liability for Variable Retirement Accounts is determined as the total account balance for active and terminated vested Generational Members at the valuation date and the Normal Cost is determined as 1.5 percent of projected Generational Member payroll. For the same determinations, the Actuarial Accrued Liability for former Cement Plant Retirement Plan Members is calculated as the Present Value of their frozen accrued benefits and Normal Cost is calculated for the remaining active Members.

For purposes of GASB 67 and 68, the Normal Cost for SDRS is the sum of individual Normal Cost calculations and will therefore vary minimally from the Normal Cost calculated for other purposes. In addition, the Total Pension

Liability and Service Cost for the Variable Retirement Account and for former Cement Plant Retirement Plan Members are calculated using the Individual Entry Age Actuarial Cost Method.

The Unfunded Actuarial Accrued Liability is the excess, if any, of the Actuarial Accrued Liability over the Actuarial Value of Assets as of the valuation date.

The Actuarial Value of Assets is equal to the Fair Value of Assets.

Asset Valuation Method

No actuarial liability is included for Non-Vested Members who terminated prior to the valuation date, except those due a refund of Accumulated Contributions.

Valuation Procedures

The Compensation amounts used in the projection of benefits and liabilities were annualized, prior-year Compensation amounts projected with assumed salary increases to the valuation year.

In computing accrued retirement benefits, Final Average Compensation was determined using actual Compensation histories supplied by SDRS staff.

For active and vested terminated Members, the spouse age difference assumption was used to populate beneficiaries' dates of birth.

Termination and retirement benefits were limited to the dollar limitation required by the Internal Revenue Code Section 415 limits for governmental plans.

Compensation was limited to the dollar amount defined under Internal Revenue Code Section 401(a)(17) for affected Members.

Decrements are assumed to occur mid-year.

Significant actuarial assumptions used include: a) a discount rate equal to the expected rate of return on the present and future assets of 6.5 percent a year, compounded; b) projected Social Security cost-of-living increases of 2.25 percent and wage inflation of 3.00 percent per year compounded annually; c) pre-retirement and post-retirement cost of living adjustment (COLA) increases of 1.88 percent per year compounded annually; d) active member salary increases that are graded by years of service, from 6.5 percent per year at entry to 3.0 percent per year after 25 years of service, compounded annually; e) 80 percent of non-retired members are assumed to be married; f) male members are assumed to be three years older than their spouses and female members are assumed to be two years younger than their spouses; g) mortality rates for non-disabled members are based upon 97 percent of the RP-2014 Mortality Table, adjusted to 2006 and projected generationally with MP-2016 with male rates based on the total dataset table and female rates based on the white collar table; h) mortality rates for disabled pensioners are based upon the RP-2014 Disabled Mortality Table, adjusted to 2006 and projected generationally with MP-2016; i) at termination of employment, members will elect either a refund of accumulated contributions or the deferred vested benefit payable at retirement according to a percent in an experience based table that decreases as service increases; and j) terminated vested members are assumed to start receipt of

Actuarial Assumptions

ACTUARIAL OVERVIEW (CONTINUED)

benefits three years prior to normal retirement, except for Class A members with twenty or more years of service who are assumed to start receipt of benefits at age 58.

Effective with the July 2018 increase, the SDRS COLA is based on the percentage increase in the third calendar quarter CPI-W for the prior year, not less than 0.5 percent and not greater than 3.5 percent. In addition, the COLA will be limited to a restricted maximum COLA under certain circumstances. The SDRS COLA effective July 1, 2019, was 2.03 percent.

The baseline COLA assumption is 2.25 percent. If the fair value funded ratio (FVFR) assuming future COLAs are equal to the baseline COLA assumption is less than 100 percent, a restricted maximum COLA is calculated such that, if future COLAs are equal to the restricted maximum COLA, the FVFR is equal to 100 percent.

For each actuarial valuation, future COLAs are assumed to equal the baseline COLA assumption if the FVFR assuming future COLAs are equal to the baseline COLA is at least 100 percent and future COLAs are assumed to equal the restricted maximum COLA otherwise. Based on the results of this June 30, 2019 Actuarial Valuation, the 2020 COLA will be equal to the increase in the 2019 third quarter CPI-W for the year of 1.56 percent since that is less than the Restricted maximum COLA of 1.88 percent. The Actuarial Accrued Liabilities and Normal Costs reported in this Actuarial Valuation are calculated assuming future COLAs are equal to 1.88 percent.

A detailed experience analysis covering the period from June 30, 2011, to June 30, 2016, was conducted and appropriate modifications in the economic and demographic assumptions were made effective with the June 30, 2017 actuarial valuation.

The actuarial assumptions were recommended by the actuary and adopted by the SDRS Board of Trustees. Please see pages 59-61 for tables of actuarial assumption rates.

The actuarial assumptions for funding purposes are identical to the assumptions used for financial reporting purposes.

The actuarial value of assets is equal to the fair value of assets.

Actuarial Assumption Tables

Sample Separation Rates

Annual Rate per 100 Members											
Mortality ⁽¹⁾							Disablement ⁽²⁾				
Age	Active/Inactive Members		Benefit Recipients		Disabled Members		Class A Low Incidence		Class A Higher Incidence		Class B Public Safety
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male & Female
25	0.043	0.014	0.043	0.014	0.779	0.238	0.010	0.010	0.015	0.015	0.041
30	0.044	0.018	0.044	0.018	0.799	0.300	0.011	0.013	0.015	0.017	0.045
35	0.053	0.025	0.053	0.025	0.962	0.423	0.012	0.015	0.015	0.031	0.051
40	0.063	0.035	0.063	0.035	1.130	0.594	0.015	0.018	0.015	0.052	0.118
45	0.092	0.053	0.092	0.053	1.660	0.899	0.025	0.034	0.027	0.090	0.232
50	0.158	0.087	0.380	0.193	1.967	1.143	0.038	0.062	0.119	0.152	0.322
55	0.266	0.141	0.547	0.271	2.297	1.487	0.079	0.096	0.250	0.222	0.398
60	0.463	0.215	0.768	0.405	2.711	1.826	0.167	0.134	0.390	0.298	0.772
65	0.832	0.313	1.107	0.657	3.283	2.158	0.274	0.174	0.540	0.378	1.342

(1) Five percent of deaths within the first three years of employment are assumed to be job-related.

(2) No disability is assumed for Class B Judicial members. Five percent of disabilities within the first three years of employment are assumed to be job-related disabilities. Class A low incidence includes teachers, certified regents, female non-certified school employees and female county employees. Class A higher incidence includes non-certified regents, state employees, city employees, male non-certified school employees and male county employees.

Annual Turnover Rate per 100 Members Select Rates During First 5 Years of Employment

Service	Teachers		Regents, Non-Certified Schools		State, City, County		Class B Public Safety
	Male	Female	Male	Female	Male	Female	
1	20.00	20.00	25.00	27.50	17.25	23.00	22.75
2	16.50	15.50	21.00	22.00	15.00	18.75	15.25
3	14.00	13.00	18.00	18.50	13.00	15.75	12.75
4	12.00	11.00	15.00	15.25	12.00	13.00	12.00
5	10.00	9.00	13.00	13.00	10.50	11.50	10.75

Annual Turnover Rate per 100 Members Ultimate Rates After First 5 Years of Employment

Age	Teachers		Regents, Non-Certified Schools		State, City, County		Class B Public Safety
	Male	Female	Male	Female	Male	Female	
25	8.50	7.25	10.75	11.50	9.00	9.75	7.75
30	7.60	6.35	10.00	10.60	7.95	8.55	6.85
35	5.80	4.55	8.90	9.10	6.05	6.70	5.35
40	4.40	3.60	7.60	7.60	4.65	5.25	4.60
45	3.70	3.50	6.40	6.70	3.95	4.30	4.50
50	3.50	3.50	5.40	6.20	3.60	4.00	4.50
55	3.50	3.50	5.00	6.00	3.50	4.00	4.50

ACTUARIAL OVERVIEW (CONTINUED)

Actuarial Assumption Tables (continued)

Retirement Age

Class A

Annual rate per 100 members eligible to retire

Age	Class A Teachers—Foundation				Other Class A Members—Foundation				Class A Teachers—Generational				Other Class A Members—Generational			
	Reduced Retirement		Unreduced Retirement		Reduced Retirement		Unreduced Retirement		Reduced Retirement		Unreduced Retirement		Reduced Retirement		Unreduced Retirement	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
55	10.0	8.0	15.0	18.0	6.0	7.0	15.0	15.0								
56	10.0	8.0	15.0	15.0	6.0	7.0	10.0	9.0								
57	11.0	10.0	15.0	12.5	6.0	7.0	10.0	9.0	11.0	10.0			6.0	7.0		
58	13.5	9.0	15.0	16.0	6.0	7.0	10.0	9.0	13.5	9.0			6.0	7.0		
59	17.0	10.0	15.0	15.0	6.0	7.0	10.0	9.0	17.0	10.0			6.0	7.0		
60	20.0	10.5	20.0	27.5	6.0	7.0	10.0	9.0	20.0	10.5			6.0	7.0		
61	25.0	17.5	30.0	27.5	9.0	11.5	20.0	17.5	25.0	17.5			9.0	11.5		
62	25.0	19.0	35.0	27.5	12.5	12.5	20.0	17.5	25.0	19.0			12.5	12.5		
63	25.0	17.5	35.0	22.5	13.0	12.5	20.0	17.5	25.0	20.0			13.0	12.5		
64	25.0	22.5	35.0	35.0	18.0	20.0	30.0	30.0	25.0	20.0			18.0	20.0		
65			35.0	50.0			30.0	30.0	30.0	20.0			20.0	20.0		
66			35.0	35.0			30.0	30.0	30.0	22.5			20.0	20.0		
67			30.0	35.0			25.0	25.0			35.0	50.0			30.0	30.0
68			25.0	35.0			25.0	25.0			35.0	35.0			30.0	30.0
69			25.0	35.0			25.0	25.0			30.0	35.0			25.0	25.0
70			100.0	100.0			25.0	25.0			100.0	100.0			25.0	25.0
71							25.0	25.0							25.0	25.0
72							25.0	25.0							25.0	25.0
73							25.0	25.0							25.0	25.0
74							25.0	25.0							25.0	25.0
75							25.0	25.0							25.0	25.0
76							25.0	25.0							25.0	25.0
77							35.0	25.0							35.0	25.0
78							35.0	25.0							35.0	25.0
79							35.0	25.0							35.0	25.0
80							100.0	100.0							100.0	100.0

Retirement Age

Class B

Annual rate per 100 members eligible to retire

Age	Class B Public Safety—Foundation		Class B Judicial—Foundation		Class B Public Safety—Generational		Class B Judicial—Generational	
	Reduced Retirement	Unreduced Retirement	Reduced Retirement	Unreduced Retirement	Reduced Retirement	Unreduced Retirement	Reduced Retirement	Unreduced Retirement
45	5.0	5.0						
46	6.5	5.0						
47	6.5	5.0			6.5			
48	6.5	10.0			6.5			
49	6.5	10.0			6.5			
50	6.5	10.0			6.5			
51	6.5	10.0			6.5			
52	6.5	18.0			6.5			
53	6.5	18.0			6.5			
54	12.0	18.0			12.0			
55		13.0	5.0	15.0	13.0			
56		13.0	5.0	15.0	13.0			
57		13.0	5.0	15.0		13.0	5.0	
58		13.0	5.0	10.0		13.0	5.0	
59		13.0	5.0	10.0		13.0	5.0	
60		13.0	5.0	10.0		13.0	5.0	
61		22.5	5.0	10.0		22.5	5.0	
62		22.5	5.0	10.0		22.5	5.0	
63		22.5	5.0	10.0		22.5	5.0	
64		32.5	5.0	10.0		32.5	5.0	
65		40.0		20.0		40.0	10.0	
66		32.5		20.0		32.5	15.0	
67		100.0		12.0		100.0		20.0
68				12.0				20.0
69				12.0				20.0
70				100.0				100.0

Compensation Progression Sample Rates

Actuarial Assumption Tables (continued)

Service	Percentage increase in year following indicated year of service
0	6.50%
5	5.03
10	4.25
15	3.76
20	3.36
25	3.05
26+	3.00

Percent of Terminated Members Assumed to Elect the Portable Retirement Option

Credited Service at Termination	Percent Electing Portable Retirement Option	Percent Electing Vested Benefit at Retirement	Credited Service at Termination	Percent Electing Portable Retirement Option	Percent Electing Vested Benefit at Retirement
0	100	0	16	20	80
1	100	0	17	20	80
2	100	0	18	20	80
3	40	60	19	20	80
4	40	60	20	10	90
5	40	60	21	10	90
6	33	67	22	10	90
7	33	67	23	10	90
8	33	67	24	10	90
9	30	70	25	5	95
10	30	70	26	5	95
11	30	70	27	5	95
12	30	70	28	5	95
13	20	80	29	5	95
14	20	80	30 or more	0	100
15	20	80			

ACTUARIAL VALUATION

SDRS Actuarial Value of Assets

The actuarial value of assets is equal to the fair value of assets.

Funding Policy

The SDRS Board of Trustees is responsible for maintaining the system's funding policy. The current funding policy includes the funding objectives, the policy regarding consideration of benefit improvements and the conditions requiring recommendation for corrective actions.

Benefit and Funding Objectives and Historical Summary

The benefit objectives of SDRS are to meet the needs of short-and long-term members by providing:

- Lifetime income replacement from SDRS resources of at least 55 percent of final average compensation for Class A members with 30 years of credited service, Public Safety members with 25 years of credited service or Judicial members with 20 years of credited service
- Lifetime income replacement of at least 85 percent of final average compensation, including income from SDRS, Social Security, and personal retirement savings of at least 100 percent of annual compensation at retirement
- Provide limited inflation protection based on the SDRS funded status and the consumer price index
- Early retirement opportunities
- Vesting after three years of contributory service
- Disability and survivor income protection
- A portable retirement option that allows members to elect a refund of both member and a portion of employer contributions, plus interest

The maximum SDRS COLA payable, funded ratio and the adequacy of the fixed, statutory contributions are the primary measures of SDRS' soundness.

The SDRS funding objectives are to maintain:

- A fair value funded ratio of at least 100 percent
- A fully funded system, with no unfunded liabilities under the entry age normal cost method
- Actuarially determined benefits that are variable and can be supported by the fixed, statutory contributions

Summary of Funded Ratios and Funding Periods

Valuation date	Actuarial accrued liability	Actuarial value of assets	Fair value of assets	Actuarial value funded ratio	Fair value funded ratio	Funding period
1988	\$1,078,235,569	\$1,050,836,113	\$1,192,526,624	97.5%	110.6%	6 years
1990	1,404,616,511	1,275,091,534	1,417,163,483	90.8	100.8	46 years
1992	1,714,482,245	1,605,481,514	1,783,732,116	93.6	104.0	16 years
1994	2,108,309,129	1,945,856,251	2,179,759,081	92.3	103.4	38 years
1996	2,539,008,893	2,390,236,436	2,909,982,912	94.1	114.6	30 years
1997	2,956,497,152	2,813,304,611	3,516,630,764	95.2	118.9	23 years
1998	3,471,898,003	3,337,293,439	4,171,616,799	96.1	120.2	22 years
1999	3,997,927,795	3,875,171,467	4,717,115,757	96.9	118.0	21 years
2000	4,611,913,087	4,427,102,390	5,156,294,800	96.0	111.8	20 years
2001	4,688,408,562	4,521,403,578	4,939,705,889	96.4	105.4	20 years
2002	4,576,948,810	4,425,392,396	4,624,866,872	96.7	101.0	20 years
2003	4,818,943,695	4,685,890,770	4,784,187,048	97.2	99.3	20 years
2004	5,051,728,157	4,937,493,861	5,518,225,955	97.7	109.2	20 years
2005	5,571,842,384	5,380,999,357	6,159,934,879	96.6	110.6	20 years
2006	5,859,994,198	5,668,535,060	6,844,629,634	96.7	116.8	20 years
2007	6,718,761,091	6,526,534,941	8,158,168,676	97.1	121.4	20 years
2008	6,976,811,927	6,784,291,685	7,312,107,461	97.2	104.8	20 years
2009	7,387,406,340	6,778,520,575	5,648,767,146	91.8	76.5	N/A ¹
2010	7,393,250,948	7,119,874,593	6,496,634,989	96.3	87.9	30 years
2011	7,712,556,672	7,433,776,511	7,936,269,496	96.4	102.9	30 years
2012	8,452,840,068	7,827,601,564	7,842,524,241	92.6	92.8	29 years
2013	8,803,761,326	8,803,761,326	9,085,706,708	100.0	103.2	N/A ²
2014	9,887,095,388	9,887,095,388	10,607,554,492	100.0	107.3	N/A ²
2015	10,352,405,041	10,352,405,041	10,776,533,615	100.0	104.1	N/A ²
2016	10,851,252,302	10,851,252,302	10,513,462,127	100.0	96.9	N/A ²
2017	11,634,963,501	11,644,038,604	11,644,038,604	100.1	100.1	N/A ²
2018	12,233,387,024	12,235,719,255	12,235,719,255	100.0	100.0	N/A ²
2019	12,461,820,956	12,472,799,657	12,472,799,657	100.1	100.1	N/A ²

¹Member and employer contributions were not sufficient to amortize the frozen unfunded actuarial accrued liability.

²Unfunded actuarial accrued liability is \$0 as of June 30, 2013, June 30, 2014, June 30, 2015, June 30, 2016, June 30, 2017, June 30, 2018, and June 30, 2019.

ACTUARIAL VALUATION (CONTINUED)

Summary of Actuarial Accrued Liability and Unfunded Actuarial Accrued Liability

The schedule below compares total actuarial accrued liabilities to assets at actuarial value and unfunded actuarial accrued liabilities to payroll over time.

The assets to total liabilities ratios show the growth of assets compared to the growth of liabilities. The unfunded liabilities to covered payroll ratios are a measure of the ability of SDRS to meet its long-term obligations.

Level or increasing values for the first ratio and level or declining values for the second ratio are an indication of stable or improving funding.

Fiscal year	Actuarial accrued liability	Actuarial value of assets	Actuarial as a % of accrued actuarial liability	Unfunded actuarial accrued liability	Total covered payroll (000,000)	Unfunded liability as a % of payroll
1987-88	\$1,078,235,569	\$1,050,836,113	97.5	\$27,399,456	\$530.0	5.2
1989-90	1,404,616,511	1,275,091,534	90.8	129,524,977	582.7	22.2
1991-92	1,714,482,245	1,605,481,514	93.6	109,000,731	694.3	15.7
1993-94	2,108,309,129	1,945,856,251	92.3	162,452,878	788.6	20.6
1995-96	2,539,008,893	2,390,236,436	94.1	148,772,457	820.1	18.1
1997	2,956,497,152	2,813,304,611	95.2	143,192,541	835.1	17.1
1998	3,471,898,003	3,337,293,439	96.1	134,604,564	875.9	15.4
1999	3,997,927,795	3,875,171,467	96.9	122,756,328	902.5	13.6
2000	4,611,913,087	4,427,102,390	96.0	184,810,697	944.6	19.6
2001	4,688,408,562	4,521,403,578	96.4	167,004,984	1,029.7	16.2
2002	4,576,948,810	4,425,392,396	96.7	151,556,414	1,080.1	14.0
2003	4,818,943,695	4,685,890,770	97.2	133,052,925	1,117.2	11.9
2004	5,051,728,157	4,937,493,861	97.7	114,234,296	1,164.0	9.8
2005	5,571,842,384	5,380,999,357	96.6	190,843,027	1,206.1	15.8
2006	5,859,994,198	5,668,535,060	96.7	191,459,138	1,229.9	15.6
2007	6,718,761,091	6,526,534,941	97.1	192,226,150	1,297.2	14.8
2008	6,976,811,927	6,784,291,685	97.2	192,520,242	1,363.9	14.1
2009	7,387,406,340	6,778,520,575	91.8	608,885,765	1,450.7	42.0
2010	7,393,250,948	7,119,874,593	96.3	273,376,355	1,491.1	18.3
2011	7,712,556,672	7,433,776,511	96.4	278,780,161	1,490.5	18.7
2012	8,452,840,068	7,827,601,564	92.6	625,238,504	1,502.7	41.6
2013	8,803,761,326	8,803,761,326	100.0	0	1,519.7	0.0
2014	9,887,095,388	9,887,095,388	100.0	0	1,587.1	0.0
2015	10,352,405,041	10,352,405,041	100.0	0	1,654.8	0.0
2016	10,851,252,302	10,851,252,302	100.0	0	1,724.4	0.0
2017	11,634,963,501	11,644,038,604	100.1	0	1,849.4	0.0
2018	12,233,387,024	12,235,719,255	100.0	0	1,902.7	0.0
2019	12,461,820,956	12,472,799,657	100.1	0	1,946.7	0.0

The solvency test is a comparison of the adequacy of SDRS actuarial value of assets to the AAL for: 1) active member contributions; 2) benefits for present benefit recipients; and 3) employer-financed active member benefits.

Solvency Test

Fiscal year	Actuarial accrued liability for				Portion of actuarial accrued liability covered by actuarial value of assets for		
	(1)	(2)	(3)	Actuarial value of assets	(1)	(2)	(3) ¹
	Member contributions	Current retirees and beneficiaries and terminated employees	Current employees: employer financed				
1987-88	\$231,163,590	\$397,780,471	\$449,291,508	\$1,050,836,113	100.0	100.0	93.9
1989-90	283,584,495	524,168,024	596,863,992	1,275,091,534	100.0	100.0	78.3
1991-92	350,130,362	685,091,034	679,260,849	1,605,481,514	100.0	100.0	84.0
1993-94	421,403,799	834,896,391	852,008,939	1,945,856,251	100.0	100.0	80.9
1995-96	484,228,278	1,017,938,827	1,036,841,788	2,390,236,436	100.0	100.0	85.7
1997	517,164,580	1,158,342,002	1,280,990,570	2,813,304,611	100.0	100.0	88.8
1998	553,386,759	1,375,461,393	1,543,049,851	3,337,293,439	100.0	100.0	91.3
1999	560,276,444	1,595,941,304	1,841,710,047	3,875,171,467	100.0	100.0	93.3
2000	618,625,484	1,889,571,734	2,103,715,869	4,427,102,390	100.0	100.0	91.2
2001	624,310,539	2,045,346,869	2,018,751,154	4,521,403,578	100.0	100.0	91.7
2002	691,820,949	2,236,330,911	1,648,796,950	4,425,392,396	100.0	100.0	90.8
2003	741,729,358	2,435,411,371	1,641,802,966	4,685,890,770	100.0	100.0	91.9
2004	807,055,387	2,637,073,090	1,607,599,680	4,937,493,861	100.0	100.0	92.9
2005	831,968,303	2,987,636,584	1,752,237,497	5,380,999,357	100.0	100.0	89.1
2006	854,928,129	3,174,042,596	1,831,023,473	5,668,535,060	100.0	100.0	89.5
2007	894,141,271	3,405,374,537	2,419,245,283	6,526,534,941	100.0	100.0	92.1
2008	946,604,328	3,811,968,488	2,218,239,111	6,784,291,685	100.0	100.0	91.3
2009	1,008,833,732	4,041,735,745	2,336,836,863	6,778,520,575	100.0	100.0	73.9
2010	1,042,639,270	4,125,804,303	2,224,807,375	7,119,874,593	100.0	100.0	87.7
2011	1,041,479,674	4,436,638,326	2,234,438,672	7,433,776,511	100.0	100.0	87.5
2012	1,046,798,327	4,909,919,285	2,496,122,456	7,827,601,564	100.0	100.0	75.0
2013	1,053,144,685	5,199,059,332	2,551,557,309	8,803,761,326	100.0	100.0	100.0
2014	1,057,991,944	5,902,266,864	2,926,836,580	9,887,095,388	100.0	100.0	100.0
2015	1,064,011,490	6,250,881,939	3,037,511,612	10,352,405,041	100.0	100.0	100.0
2016	1,078,941,286	6,627,703,346	3,144,607,670	10,851,252,302	100.0	100.0	100.0
2017	1,106,977,216	7,016,162,273	3,511,824,012	11,644,038,604	100.0	100.0	100.0
2018	1,139,798,233	7,436,513,800	3,657,074,991	12,235,719,255	100.0	100.0	100.0
2019	1,166,852,994	7,697,593,396	3,597,374,566	12,472,799,657	100.0	100.0	100.0

¹ Indicates the percentage of liabilities in this category currently funded after fully funding categories (1) and (2).

ACTUARIAL VALUATION (CONTINUED)

Schedule of Active Member Valuation Data

Valuation date	# of active members	Covered payroll (000,000)	Average annual pay	% increase in average pay	# of participating employers
1987	27,906	500.2	17,924	1.9	
1988	28,411	530.0	18,655	4.1	
1989	28,749	554.9	19,302	3.5	
1990	29,378	582.7	19,835	2.8	
1991	30,524	616.8	20,207	1.9	
1992	31,717	694.3	21,890	8.3	
1993	32,512	731.1	22,487	2.7	
1994	33,301	788.6	23,681	5.3	
1995	33,390	811.1	24,292	2.6	
1996	32,624	820.1	25,139	3.5	
1997	32,397	835.1	25,776	2.5	
1998	32,903	875.9	26,620	3.3	
1999	33,664	902.5	26,810	0.7	
2000	34,180	944.6	27,637	3.1	
2001	34,887	1,029.7	29,515	6.8	
2002	35,130	1,080.1	30,745	4.2	
2003	35,114	1,117.2	31,818	3.5	
2004	35,408	1,164.0	32,875	3.3	
2005	35,774	1,206.1	33,715	2.6	
2006	36,074	1,229.9	34,094	1.1	
2007	37,311	1,297.2	34,769	2.0	
2008	37,707	1,363.9	36,170	4.0	474
2009	38,596	1,450.7	37,586	3.9	468
2010	39,014	1,491.1	38,220	1.7	470
2011	38,490	1,490.5	38,725	1.3	471
2012	38,207	1,502.7	39,329	1.6	473
2013	38,594	1,519.7	39,377	0.1	474
2014	38,951	1,587.1	40,745	3.5	476
2015	39,383	1,654.8	42,037 ¹	3.1	481
2016	39,940	1,724.4	43,194	2.8	485
2017	40,452	1,849.4	45,734	5.9	491
2018	41,180	1,902.7	46,220	1.1	495
2019	41,500	1,946.7	46,924	1.5	497

¹ Correction to 2015 figure.

The schedule below identifies retirees' and beneficiaries' benefits considered in the current and previous actuarial valuations.

Schedule of Retirees and Beneficiaries Added to and Removed from Benefit Payroll

Valuation date	Beginning of year balance	Number added to payroll	Number removed from payroll	End of year balance	Annual pension added to payroll	Annual pension removed from payroll	Annual pension benefit amount	Average annual benefit	% increase in average benefit
2002	15,390	1,051	548	15,893	\$14,781,382	\$4,286,698	\$175,339,813	\$11,033	5.4
2003	15,893	1,112	564	16,441	16,904,111	4,612,777	191,738,495	11,662	5.7
2004	16,441	1,207	619	17,029	19,647,803	4,991,607	211,424,721	12,416	6.5
2005	17,029	1,121	602	17,458	16,955,458	4,970,672	228,469,621	13,020	4.9
2006	17,458	1,130	602	18,076	17,273,416	5,866,751	245,707,324	13,593	4.4
2007	18,076	1,306	663	18,719	20,128,796	5,699,854	265,922,928	14,206	4.5
2008	18,719	1,279	677	19,321	20,931,066	6,957,387	297,672,788	15,407	8.5
2009	19,321	1,295	667	19,949	21,285,086	7,429,345	318,556,151	15,969	3.6
2010	19,949	1,318	706	20,561	20,287,505	8,415,997	335,034,177	16,295	2.0
2011	20,561	1,575	679	21,457	27,164,131	8,006,912	359,385,525	16,749	2.8
2012	21,457	1,663	712	22,408	26,727,462	8,827,261	386,478,319	17,247	3.0
2013	22,408	1,683	764	23,327	27,259,699	9,535,172	410,679,002	17,605	2.1
2014	23,327	1,975	740	24,562	33,048,542	10,296,988	444,472,655	18,096	2.8
2015	24,562	1,766	839	25,489	29,958,087	12,083,416	474,690,226	18,623	2.9
2016	25,489	1,773	842	26,420	28,875,202	11,641,932	505,019,297	19,115	2.6
2017	26,420	1,689	891	27,218	29,833,466	13,829,331	530,508,306	19,491	2.0
2018	27,218	1,719	856	28,081	30,153,607	13,099,610	556,533,473	19,819	1.7
2019	28,081	1,917	929	29,069	36,042,932	14,900,910	587,929,811	20,225	2.0

ACTUARIAL VALUATION (CONTINUED)

Comparison of Actuarial Valuation Results

	2019 actuarial valuation	2018 actuarial valuation	% change
Active members			
Number	41,500	41,180	0.8
Average age	44.7	44.8	(0.2)
Average credited service	10.9	10.9	0.0
Annual prior year's compensation of members	\$1,946,729,245	\$1,902,709,705	2.3
Average annual compensation ¹	\$46,924	\$46,220	1.5
Benefit recipients			
RETIRED MEMBERS			
Number	25,238	24,334	3.7
Average age	72.2	72.1	0.1
Total annualized benefits	\$537,599,747	\$507,993,104	5.8
Average annualized benefits	\$21,301	\$20,876	2.0
BENEFICIARIES			
Number	3,567	3,471	2.8
Total annualized benefits	\$47,249,826	\$45,401,713	4.1
Average annualized benefits	\$13,246	\$13,080	1.3
DISABILITIES			
Number	264	276	(4.3)
Total annualized benefits	\$3,080,238	\$3,138,656	(1.9)
Average annualized benefits	\$11,668	\$11,372	2.6
Total benefit recipients			
Number	29,069	28,081	3.5
Total annual benefits	\$587,929,811	\$556,533,473	5.6
Average annual benefits	\$20,225	\$19,819	2.0
Suspended benefit recipients			
Number of suspended retirees	55	44	25
Number of suspended beneficiaries	72	69	4.3
Total suspended benefit recipients	127	113	12.4
Terminated members			
Number—vested	10,118	9,790	3.4
Number—non-vested (entitled to accumulated contributions only)	8,871	8,942	(0.8)
Total terminated members	18,989	18,732	1.4
Total system members	89,685	88,106	1.8
Results of actuarial valuation			
Normal cost ² (without expenses)	11.462%	11.586%	(1.1)
(with expenses)	11.710%	11.835%	(1.1)
Frozen unfunded actuarial accrued liability	\$0	\$0	
Fair value of assets	\$12,472,799,657	\$12,235,719,255	1.9
Actuarial value of assets	\$12,472,799,657	\$12,235,719,255	1.9
Actuarial accrued liability (AAL)	\$12,461,820,956	\$12,233,387,024	1.9
Actuarial value funded ratio	100.1%	100.0%	0.1
Fair value funded ratio	100.1%	100.0%	0.1

¹ Excludes active, former Cement Plant Retirement Plan members for whom no compensation is reported.

² Includes variable retirement contribution for generational members..

South Dakota Retirement System (SDRS)

SDRS was established effective July 1, 1974. The Supreme and Circuit Court Judicial Retirement System, District County Court and Municipal Court Judges' Retirement Program, South Dakota Teachers' Retirement System, South Dakota Municipal Retirement System, South Dakota Law Enforcement Retirement System, South Dakota Public Employees' Retirement System and South Dakota Board of Regents Retirement System (effective July 1, 1975) were consolidated into SDRS. Effective April 1, 2014, the South Dakota Cement Plant Retirement Plan was merged into SDRS.

Effective Date

SDRS is a governmental retirement system created by Act of the State of South Dakota.

Type of System

The Retirement System is administered by the Board of Trustees consisting of two state government members; two teacher members; a participating municipality member; a participating county member; a currently contributing Class B member other than a justice, judge or magistrate judge; a justice, judge, or magistrate judge; a participating classified employee member; one head of a principal department or one head of a bureau under the office of executive management; an individual appointed by the governor; a county commissioner of a participating county; a school district board member; an elected municipal official of a participating municipality; a faculty or administrative member employed by the Board of Regents; a retiree; and an investment council representative, ex-officio non-voting.

System Administration

The board of trustees appoints an executive director as the system's chief executive officer.

Employers include the State of South Dakota and its departments, bureaus, boards, or commissions, and any of its governmental or political subdivisions or any public corporation of the State of South Dakota that elects to become a participating unit.

Employers Included

All of the following permanent full-time employees are included as Members in the System:

Members

- All state employees;
- All teachers;
- All justices, judges, and magistrate judges;
- All law enforcement employees of counties and municipalities that are participating with their Class B employees;
- All general employees of counties and municipalities that are participating with their Class A employees;
- All classified employees of school districts that are participating with their classified employees;
- All employees of the Board of Regents;
- All state law enforcement officers.

PLAN SUMMARY (CONTINUED)

Employees of the Department of Labor hired before July 1, 1980, who elected to remain covered under a former retirement plan, and members of the governing body of any participating county, municipality, or other public subdivision are excluded from SDRS membership. Sioux Falls municipal employees hired prior to July 1, 2013, are also excluded from SDRS membership.

Membership is immediate upon hire and is subdivided into three classes as follow:

- Class A members: all members other than Class B members or Class C members
- Class B members: members who are justices, judges and magistrate judges (*Class B Judicial Members*) and state law enforcement officers, municipal police officers, county sheriffs, deputy county sheriffs, correctional security staff, parole agents, air rescue firefighters, campus security officers, court services officers, juvenile corrections agents, conservation officers, and park rangers (*Class B Public Safety Members*).
- Class C members: former members of the Cement Plant Retirement Plan.

Class A members constitute 92 percent of SDRS membership.

During the 2016 South Dakota Legislative Session, a new benefit structure was enacted for members joining SDRS after June 30, 2017. Members joining after that date will be called generational members and will have a different benefit structure than foundation members—members who joined on or before June 30, 2017.

Credited Service

Credited Service is the period of employment for an SDRS member which is considered in determining the amount of benefits. It includes the following:

- Years and fractional years for which member contributions were made (contributory service).
- The period of non-contributory service credited prior to July 1, 1974, under the prior retirement systems consolidated under this system.
- For employees of the Board of Regents, the period of service between April 1, 1964, and June 30, 1975, for which purchase was made to Bankers Life and the period of service prior to April 1, 1964, up to a maximum of 20 years, for which purchase was made.
- Periods of non-contributory service credited due to specific legislation since 1974.

Credited service may be purchased for public employment for which members are not entitled to retirement benefits, at an actuarial cost based on age and subject to a minimum of 100 percent of combined member and employer contributions. Credited service purchased after July 1, 2004, shall not be considered contributory service for eligibility purposes. Credited service is purchased with an after-tax payment or a trustee-to-trustee transfer.

Compensation is gross wages paid to a member for credited service rendered during the period for which payment was earned. It includes W-2 wages, plus any amount contributed to a member's individual retirement plan, plus a member's contribution to SDRS made on a before-tax basis, plus any amount contributed by a member to a plan that meets the requirements of Section 125, 401, 403, 308, or 457 of the Internal Revenue Code. Compensation does not include any allowance, payment or reimbursement for travel, meals, lodging, moving, uniforms or any other expense incidental to employment, any lump sum payment for sick or annual leave, any payments for or in lieu of insurance coverage, or any other benefit paid by an employer, any allowance or payment for housing or vehicles, any temporary payment not due to additional duties, any payment paid as a lump sum or over a period of time and based on or attributable to retirement or an agreement to retire in the future or results in an incentive to retire, any payment upon dismissal or severance, any worker's compensation payments and any payment contingent on a member terminating employment at a specified time in the future, even if included in W-2 wages.

Compensation

Compensation for members hired after June 30, 1996, is limited as prescribed in Section 401(a)(17) of the Internal Revenue Code. For members hired on or before June 30, 1996, compensation is unlimited for credited service before January 1, 2018, and limited as prescribed in Section 401(a)(17) of the Internal Revenue Code for credited service on or after January 1, 2018.

Foundation Members

Final average compensation is the highest average annual compensation earned by a member during 12 consecutive calendar quarters of the last 40 such quarters of credited service. The final average compensation is limited by statutory provisions that prevent increases greater than 5 percent in the final quarter and year prior to termination.

Final Average Compensation

For Foundation members whose credited service ends after June 30, 2021, but before July 1, 2022, final average compensation is the highest average annual compensation earned by a member during 16 consecutive calendar quarters of the last 40 such quarters of credited service.

For Foundation members whose credited service ends after June 30, 2022, final average compensation is the highest average annual compensation earned by a member during 20 consecutive calendar quarters of the last 40 such quarters of credited service.

For members whose credited service ends after June 30, 2020, the 5 percent limit on compensation increases will be applied to each of the four-consecutive-calendar-quarter periods considered in the calculation of final average compensation. At the commencement of retirement, disability or death benefits, member and employer contributions on compensation excluded from the calculation of final average compensation due to the application of the limits will be returned to the member with credited investment return based on the actual investment earnings of the SDRS trust fund.

Generational Members

For Generational members, final average compensation is the highest average annual compensation earned by a member during 20 consecutive calendar quarters of the last 40 such quarters of credited service.

The 5 percent limit on compensation increases will be applied to each of the four-consecutive-calendar-quarter periods considered in the calculation of final average compensation. At the commencement of retirement, disability or death benefits, member and employer contributions on compensation excluded from the calculation of final average compensation due to the application of the limits will be returned to the member with credited investment return based on the actual investment earnings of the SDRS trust fund.

**Fixed Statutory
Employer
Contributions**

Employer contributions equal those amounts contributed by members except for the additional contributions noted below.

**Fixed Statutory
Member
Contributions**

Class A members: 6 percent of compensation
Class B Public Safety members: 8 percent of compensation
Class B Judicial members: 9 percent of compensation

Member contributions are made on a pre-tax basis as permitted under Section 414(h) of the Internal Revenue Code.

**Accumulated
Contributions**

For members with less than three years of contributory service, accumulated contributions are equal to member contributions and 50 percent of employer contributions. For members with three or more years of contributory service, accumulated contributions are equal to member contributions and 85 percent of employer contributions. Interest is credited annually at a rate established by the Board of Trustees that is no greater than 90 percent of the average 91-day U.S. Treasury Bill rate for the immediately preceding calendar year. Such rate shall have no minimum limitation and shall not be greater than the assumed rate of investment return, which is currently 6.5 percent.

Accumulated contributions for members who terminated prior to July 1, 2010, include 75 percent of employer contributions with less than three years of contributory service or 100 percent of employer contributions with three or more years of contributory service.

**Additional
Contributions**

Effective July 1, 2002, employers contribute 6.2 percent of Class A Foundation member's calendar year compensation in excess of the maximum taxable amount for Social Security for the calendar year. These additional contributions are not included in accumulated contributions.

All benefits except those depending on the member's accumulated contributions are annually increased by the COLA.

Cost-of-Living Adjustment (COLA)

Prior to the COLA payable July 1, 2018, the annual increase in the amount of the SDRS benefits payable on each July 1st was indexed to CPI and based on the SDRS fair value funded ratio as of the prior July 1. The amount of the increase was:

- If the SDRS fair value funded ratio is 100 percent or more—3.1 percent COLA
- If the SDRS fair value funded ratio is at least 90 percent, but less than 100 percent, CPI with a 2.1 percent minimum and a 2.8 percent maximum
- If the SDRS fair value funded ratio is at least 80 percent, but less than 90 percent, CPI with a 2.1 percent minimum and a 2.4 percent maximum
- If the SDRS fair value funded ratio is less than 80 percent—2.1 percent COLA

Effective with the COLA payable July 1, 2018, the annual increase in the amount of the SDRS benefits payable on each July 1 is the percentage increase in the third calendar quarter consumer price index (CPI-W) for the prior year and further limited as follows:

- If the SDRS FVFR calculated assuming the COLA is equal to the baseline COLA assumption (2.25 percent) is at least 100 percent: CPI-W increase with a 0.5 percent minimum and a 3.5 percent maximum
- If the SDRS FVFR calculated assuming the COLA is equal to the baseline COLA assumption (2.25 percent) is less than 100 percent: CPI-W increase with a 0.5 percent minimum and a restricted maximum such that, if future COLAs are assumed to equal the restricted maximum, the SDRS FVFR is at least 100 percent.

History of SDRS COLA

Benefit Increase in July	SDRS Minimum COLA	SDRS Maximum COLA	Prior Year Inflation ¹	SDRS COLA
1983 to 2009	COLA Fixed by Statute			3.10%
2010	COLA Fixed by Statute			2.10%
2011	2.10%	2.40%	1.49%	2.10%
2012	3.10%	3.10%	4.25%	3.10%
2013	2.10%	2.80%	1.66%	2.10%
2014	3.10%	3.10%	1.49%	3.10%
2015	3.10%	3.10%	1.70%	3.10%
2016	3.10%	3.10%	(0.41%)	3.10%
2017	2.10%	2.80%	0.76%	2.10%
2018	0.50%	1.89%	1.96%	1.89%
2019	0.50%	2.03%	2.79%	2.03%
2020	0.50%	1.88%	1.56%	1.56%

PLAN SUMMARY (CONTINUED)

Normal Retirement Age

Foundation Members

The normal retirement age is age 65 with three years of contributory service for Class A and Class B Judicial members of the system and the normal retirement age is age 55 with three years of contributory service for Class B Public Safety members.

Generational Members

The normal retirement age is age 67 with three years of contributory service for Class A and Class B Judicial members of the system and the normal retirement age is age 57 with three years of contributory service for Class B Public Safety members.

Normal Retirement Benefit

Foundation Members

Members are entitled to retire with a benefit commencing the first of the month in which they reach normal retirement age and are payable for life, with an automatic 60 percent surviving spouse's benefit paid for the spouse's lifetime.

Class A Benefit

The Class A benefit is the larger of that provided by the following standard formula or alternate formula:

Standard Formula

Enhanced Benefit

1.7 percent times final average compensation times Class A credited service prior to July 1, 2008, plus

Base Benefit

1.55 percent times final average compensation times Class A credited service after July 1, 2008.

OR

Alternate Formula

Enhanced Benefit

2.4 percent times final average compensation times Class A credited service prior to July 1, 2008, plus

Base Benefit

2.25 percent times final average compensation times Class A credited service after July 1, 2008, less

80 percent of primary Social Security benefit.

Class B Public Safety Benefit

The Class B Public Safety benefit is:

Enhanced Benefit

2.4 percent times final average compensation times Class B Public Safety credited service prior to July 1, 2008, plus

Base Benefit

2.0 percent times final average compensation times Class B Public Safety credited service after July 1, 2008.

Class B Judicial Benefit

The Class B Judicial benefit is the sum of the following:

First 15 Years of Credited Service

Enhanced Benefit

3.733 percent times final average compensation times Class B Judicial service credited prior to July 1, 2008, with a maximum of 15 years, plus

Base Benefit

3.333 percent times final average compensation times Class B Judicial credited service after July 1, 2008, with a maximum of 15 years less Class B Judicial credited service prior to July 1, 2008, plus

Years of Credited Service in Excess of 15 Years

Enhanced Benefit

2.4 percent times final average compensation times Class B Judicial credited service in excess of 15 years and prior to July 1, 2008, plus

Base Benefit

2.0 percent times final average compensation times Class B Judicial credited service in excess of 15 years and after July 1, 2008.

Generational Members

Members are entitled to retire with a benefit commencing on the first of the month in which they reach normal retirement age and are payable for life. Optional reduced benefits are available, with a 60 percent or 100 percent surviving spouse benefit paid for the spouse's lifetime.

Class A Benefit

The Class A benefit is 1.8 percent times final average compensation times Class A credited service.

Class B Public Safety Benefit

The Class B Public Safety benefit is 2.0 percent times final average compensation times Class B Public Safety credited service.

Class B Judicial Benefit

The Class B Judicial benefit is the sum of the following:

First 15 Years of Credited Service

3.333 percent times final average compensation times Class B Judicial credited service with a maximum of 15 years, plus

Years of Credited Service in Excess of 15 Years

2.0 Percent times final average compensation times Class B Judicial credited service in excess of 15 years.

In addition to the formula benefits, a notional variable retirement account will be funded with annual variable retirement contributions and credited with the actual investment return of the SDRS trust fund. The variable retirement contributions will be a portion of the employer contributions, initially set at 1.5 percent of compensation. At retirement, disability or death, generational members will receive the contributions and credited investment return as a lump sum, rolled over to an eligible retirement account or the SDRS Supplemental Retirement Plan, or used to purchase a Supplemental Pension Benefit.

PLAN SUMMARY (CONTINUED)

All SDRS benefits are paid monthly and limited to the maximum benefit under Section 415 of the Internal Revenue Code.

Delayed Retirement Benefit

The monthly benefit payable upon retirement after normal retirement date is based on credited service and final average compensation to the member's actual retirement date.

Special Early Retirement Date (Rule of 85, Rule of 80, and Rule of 75)

Foundation Members

Members are entitled to retire at the member's special early retirement date with a benefit equal to the normal retirement benefit based on credited service and final average compensation to date of retirement, with no reduction for early payment.

The special early retirement date is the date at which age plus credited service equal:

- 85 for Class A members, but not prior to age 55
- 80 for Class B Judicial members, but not prior to age 55
- 75 for Class B Public Safety members, but not prior to age 45

Generational Members

No special early retirement benefits are available.

Early Retirement Benefit

Any member with at least three years of contributory service can retire in the ten years preceding their normal retirement age. The member will be entitled to receive the normal retirement benefit based on credited service and final average compensation to date of retirement, with a reduction for early commencement. Benefits commence on the first of the month following retirement (or the date chosen for payment to commence) and 30 days after the application for retirement benefits has been received by SDRS.

Foundation Members

Benefits will be reduced by 1/4 of 1 percent for each full month by which the commencement of payments precedes the earlier of the normal retirement age or the special early retirement date.

Generational Members

Benefits will be reduced by 5/12 of 1 percent for each full month by which the commencement of payments precedes the normal retirement age.

Vested Benefit and Portable Retirement Option

A terminated member with at least three years of contributory service will be entitled to receive the normal or early retirement based on the member's credited service at the time of termination of employment and increased by the cost-of-living adjustment from the date of termination to the date benefits commence.

In lieu of any monthly lifetime retirement benefits under the system, a terminating member may receive a lump-sum of his or her accumulated contributions under the portable retirement option.

A contributing member, who becomes disabled with at least three years of contributory service, or was disabled by accidental means while performing the usual duties of his job, is entitled to an immediate monthly disability benefit.

Disability Benefit

For disability applications received on or before June 30, 2015, the disability benefit is equal to:

- For the first 36 months, 50 percent of the member's final average compensation, increased 10 percent for each eligible child to a maximum of four children.
- Starting with the 37th month,
 - if the member is receiving disability benefits from Social Security, the greater of:
 - 50 percent of final average compensation plus 10 percent for each eligible child to a maximum of 90 percent less the amount of primary Social Security.
 - 20 percent of final average compensation increased by the COLA
 - the unreduced accrued retirement benefit at date of disability
 - if the member is not receiving disability benefits from Social Security, the greater of:
 - 20 percent of final average compensation increased by the COLA
 - the unreduced accrued retirement benefit at date of disability

The maximum benefit is 100 percent of final average compensation (increased by the COLA) reduced by earned income and primary Social Security.

At age 65 (or when there are no eligible children, if later), but not before five years of disability, the benefit payable is converted to the normal retirement benefits based on compensation increased by the COLA for the period between the date of disability and normal retirement age, and credited service as if employment had continued uninterrupted to normal retirement age.

For disability applications received after June 30, 2015, the disability benefit is equal to the greater of:

- 25 percent of the member's final average compensation at the date of disability
- the unreduced accrued retirement benefit at the date of disability

A surviving spouse of a disabled member who dies while receiving a benefit will receive 60 percent of the member's benefit for the spouse's lifetime, commencing at the spouse's age 65 (or age 67 for spouses of Generational members).

Pre-Normal Retirement Age and Post-Disability Deaths

Survivor Benefits

For deaths on or before June 30, 2015:

If an active member with at least one year of contributory service, or a member receiving a disability benefit commencing after July 1, 1974, dies, the surviving spouse having the care of eligible dependent children will receive an immediate benefit equal to 40 percent of the member's final average compensation, increased 10 percent for each child to a maximum of six children. If the surviving eligible dependent children are under the care of a guardian, the benefit payable will be 20 percent of the member's final average compensation for each child (to a maximum of five children).

The above survivor benefits are all payable monthly without improvements and reduced by 75 percent of primary Social Security benefit.

If no benefit is payable as defined above or payment has ceased, and the member's accumulated contributions have not been withdrawn, the spouse is entitled to receive at the spouse's age 65 a benefit equal to 60 percent of the normal retirement benefit that would have been payable to the deceased member at normal retirement age based on projected credited service and projected compensation, and further increased by the COLA for any time between normal retirement date and payment commencement date.

The benefit is payable to the spouse when the spouse reaches age 65. Effective July 1, 2015, a member's spouse may elect to commence survivor benefits as early as age 55 and the spouse's benefit is reduced by five percent for each year commencement precedes the spouse's age 65.

For deaths after June 30, 2015:

If an active member with at least three years of contributory service, or a member receiving a disability benefit approved after June 30, 2015, dies, the eligible dependent children will receive an immediate benefit equal to the greater of:

- 25 percent of the member's final average compensation at the date of disability
- the unreduced accrued retirement benefit at the date of disability

The benefit will be split equally among any eligible children of the member. The benefit ceases if there are no eligible children. If no benefit is payable as defined above, the spouse is entitled to receive at the spouse's age 65 (or age 67 for spouses of Generational members) a benefit equal to 60 percent of the benefit payable above increased by the COLA for any time between the date of the member's death and payment commencement date. If the benefit ceases due to no eligible children, the benefit is increased by the COLA for any time between the date benefit ceased and payment commencement date.

The spouse may elect to commence survivor benefits as early as age 55 (age 57 for spouses of Generational members) and the spouse's benefit is reduced by five percent for each year commencement precedes the spouse's age 65 (age 67 for spouses of Generational members).

Post-Normal Retirement Age and Post-Retirement Deaths Foundation Members

Upon the death of a Foundation retiree or Foundation member at or beyond normal retirement age, the surviving spouse is entitled to receive 60 percent of the monthly retirement benefit the member was receiving or was eligible to receive.

Generational Members

Upon the death of a Generational member at or beyond normal retirement age but not yet receiving benefits, the surviving spouse is entitled to receive a lifetime benefit equal to 60 percent of the benefit the member would have received if the member retired on the date of death and elected the 60 percent joint and survivor benefit.

Upon the death of a Generational member receiving retirement benefits, the surviving spouse is entitled to receive a lifetime benefit equal to 60 percent or 100 percent of the monthly retirement benefit the member was receiving if the member had elected a joint and survivor benefit at retirement.

Terminated Member

If a member dies prior to benefit commencement, the accumulated contributions are refunded to the designated beneficiary, children, or estate in a lump sum.

Optional Spouse Coverage

Prior to June 30, 2010, a member could have elected to provide an additional benefit payable to the surviving spouse within 365 days after becoming a member, within 90 days following attainment of age 35, or within 90 days after the first anniversary of marriage. This optional coverage may continue until the member's spouse attains age 65, the death or disability of the member, the death of the member's spouse, termination of the member's marriage to his spouse, or the member's termination of employment or termination of coverage.

The elected additional monthly benefit is equal to 40 percent of the member's final average compensation multiplied by the COLA for each full year between the date of death or disability of the member to payment commencement. Such benefit is paid upon the member's death from the time there are no eligible children until the spouse dies or attains age 65.

The cost of this protection is paid by the member through an additional contribution of 1.5 percent of compensation, which will not be matched by the employer and is not refundable.

Accumulated Contributions as Minimum Benefits

If the aggregate benefit payments received by a member and the member's beneficiary (excluding benefits received under the optional spouse coverage benefit provisions) do not equal the sum of the accumulated contributions, then the difference will be paid to the member's designated beneficiary, children, or estate in a lump sum.

The monthly retirement benefits may be modified to an optional form of payment which is the actuarial equivalent of the benefit due under the system.

Foundation Members

A Social Security level income payment option is available for members who retire before age 62.

Generational Members

A joint and survivor benefit with 60 percent or 100 percent of the member's benefit continuing to a surviving spouse is available with a reduced member's benefit.

Administrative expenses are paid from the system's assets in an amount not to exceed 3 percent of the annual member and employer contributions received by the system.

**Optional Forms of
Retirement
Payments**

**Administrative
Expenses**

PLAN SUMMARY (CONTINUED)

Retired Members

Retired members' and terminated vested members' benefits have been increased to reflect the benefit formula currently in effect for active members.

INVESTMENT SUMMARY



State Investment Officer's Letter Investment Analysis

The Investment Council
Investment Objectives and Policy
Prudent Man Standard
Investment Performance
Schedule of Investment Management Expenses
Summary of Investment Portfolios
Asset Allocation
SDRS Rates of Return
Real Estate and Private Equity LP Investments

STATE INVESTMENT OFFICER'S LETTER

TO THE SOUTH DAKOTA RETIREMENT SYSTEM BOARD OF TRUSTEES:

This letter summarizes fiscal year 2019 investment performance and discusses the investment objectives, long-term approach, and future return expectations for South Dakota Retirement System (SDRS) assets. Additional information about SDRS investments may be found in the South Dakota Investment Council annual report available at www.sdic.sd.gov.

FISCAL YEAR 2019 PERFORMANCE

The fiscal year 2019 time-weighted investment return was 4.9% net of investment management cost. This was less than the Investment Council's capital markets benchmark return of 7.9%. The largest detractors from performance were the global equity and private equity categories which underperformed market indexes.

INVESTMENT OBJECTIVES

The primary investment objective for SDRS assets is to achieve and exceed over the long term the return of the Council's capital markets benchmark. This benchmark reflects the Council's benchmark asset allocation applied to index returns for each category. Accomplishment of this objective provides the best opportunity to earn returns sufficient to maintain the financial strength of SDRS. The secondary objective is to achieve and exceed over the long term the median return earned by peer funds.

INVESTING FOR THE LONG TERM

The Council has managed SDRS assets since consolidation in 1974. Since inception, investment returns have meaningfully exceeded the Council's capital markets benchmark and the median return of other state retirement systems across the nation.

The Council invests in assets believed to be undervalued from a long-term perspective. The investment valuation process is based on the view that the worth of an asset is the present value of its future cash flows. Internal research efforts focus on estimating future cash flows and assessing risk which impacts the rate used to discount cash flows to present value.

Results vary significantly from year to year with many interim periods of underperformance in the Council's history. Whether an individual year is good, bad, or average, it is important to be mindful that the Council invests for the long term and that actions taken in one year may impact performance several years down the road. Success has resulted primarily from adhering to the long-term strategies during underperforming periods.

RETURN EXPECTATIONS


The Council believes market return expectations should be based on forward-looking long-term cash flows rather than extrapolation of past returns which tend to relate inversely to future results.

As of June 30, 2019, long-term expected returns were 2.0% for bonds and 7.4% for stocks. Low interest rates foreshadow low future bond returns. The expected return for stocks is lower than earned on average historically. The expected long-term return for the overall SDRS fund, which is diversified across several asset categories, is 6.3%. This excludes any impact of withdrawals from the fund and any value added or detracted relative to index returns. The expected return is the mid-point of a range of possible outcomes. The one standard deviation range, which statistically encompasses the central two-thirds of potential outcomes, is 1.4% to 11.2% per annum for a ten-year horizon and 2.9% to 9.7% for a 20-year horizon.

History has shown that following large market increases, opportunities may be sparse for a time. Chasing lesser opportunities has tended to backfire when those assets became much cheaper later. The lesson learned is to wait for worthwhile opportunities, and when absent, be satisfied with modest results until better opportunities come along.

The Council values the excellent cooperative relationship with the SDRS Board of Trustees and staff. The Council believes this teamwork and a disciplined focus on long-term investment value will serve us well in the decades to come.

Submitted by:



Matthew L. Clark, CFA
State Investment Officer

The SDRS trust fund is invested under the direction of the South Dakota Investment Council. The Council is composed of five members at large with financial backgrounds and three ex-officio members, the State Treasurer, the Commissioner of School and Public Lands, and the SDRS Executive Director. The Council is a policy-making board and attends to matters such as asset allocation, portfolio strategy, and the selection or dismissal of outside investment managers.

The Investment Council

The data in the investment section of this report was prepared by the South Dakota Investment Council. The South Dakota Retirement System in conjunction with the South Dakota Investment Council and external auditors, Eide Bailly, prepared the investment section of this report.

The South Dakota Investment Council's overall objective for SDRS assets is to achieve and exceed over the long term the return of the Council's capital markets benchmark. Accomplishment of this objective provides the best opportunity to earn returns sufficient to maintain the financial strength of SDRS. An estimate of the long-term return of the benchmark is used by the SDRS actuary to assess the funding status of SDRS. If investment markets prove disappointing or the Council underperforms, benefit reductions may be statutorily required.

Investment Objectives and Policy

The capital markets benchmark reflects the Council's benchmark asset allocation applied to index returns for each asset category. The key investment policy decision relates to asset allocation as discussed in the SDRS Asset Allocation Focus in the Council's annual report, which may be found on their website, www.sdic.sd.gov. The index-based capital markets benchmark is believed to represent a challenging comparison as the average investor tends to underperform market indexes over time due to management fees and transactions costs.

This objective has been achieved for the majority of rolling 5 and 10-year periods and all 20-year and 30-year periods. The table on page 84 summarizes SDRS total fund performance versus the Council's capital markets benchmark.

A secondary objective is to achieve and exceed over the long term the median return earned by peer funds. Comparison to peer funds can help in assessing performance as most peer funds have similar long-term return objectives.

South Dakota Codified Law 4-5-27 requires that the South Dakota Retirement System trust fund be invested according to the Prudent Man Standard. South Dakota Codified Law defines the Prudent Man Standard as follows:

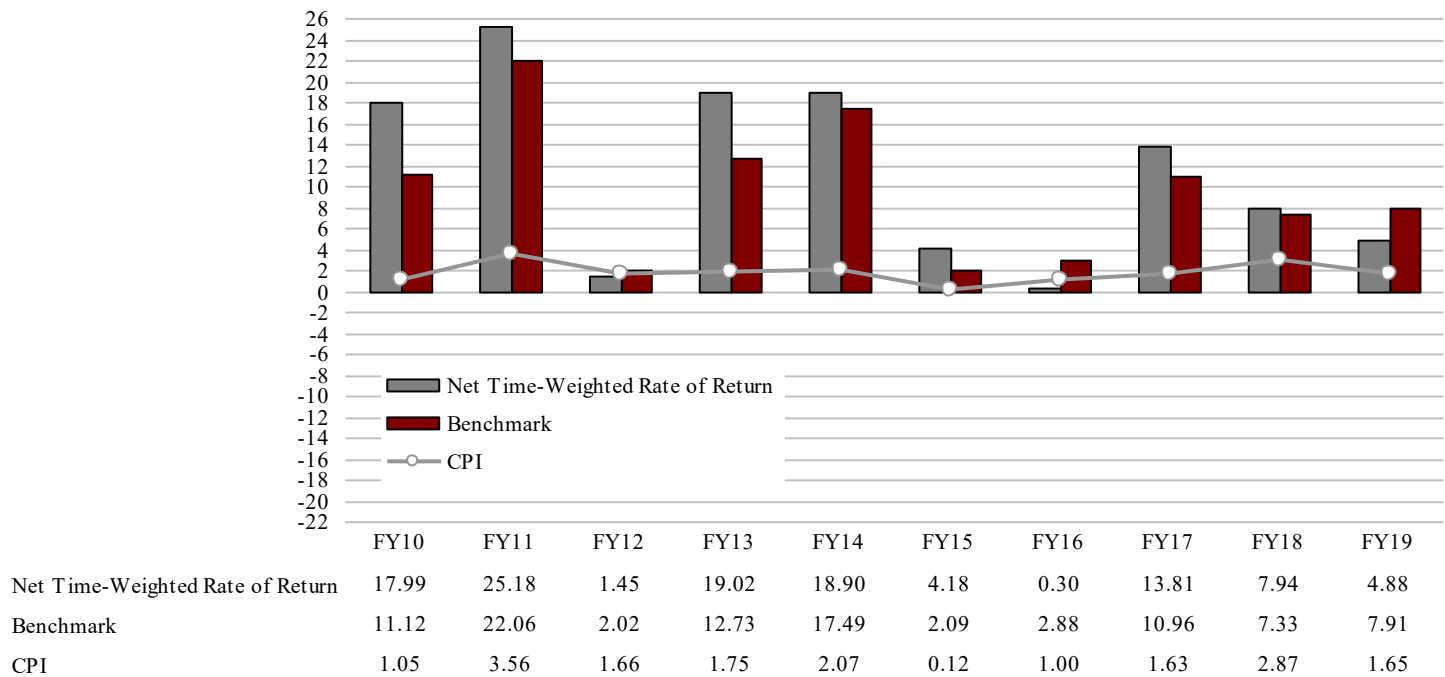
Prudent Man Standard

Any investment under the provisions of SDCL 4-5-12 to 4-5-39, inclusive, shall be made with the exercise of that degree of judgment and care, under circumstances then prevailing, which persons of prudence, discretion, and intelligence exercise in the management of their own affairs, not for speculation but for investment, considering the probable safety of their capital as well as the probable income to be derived.

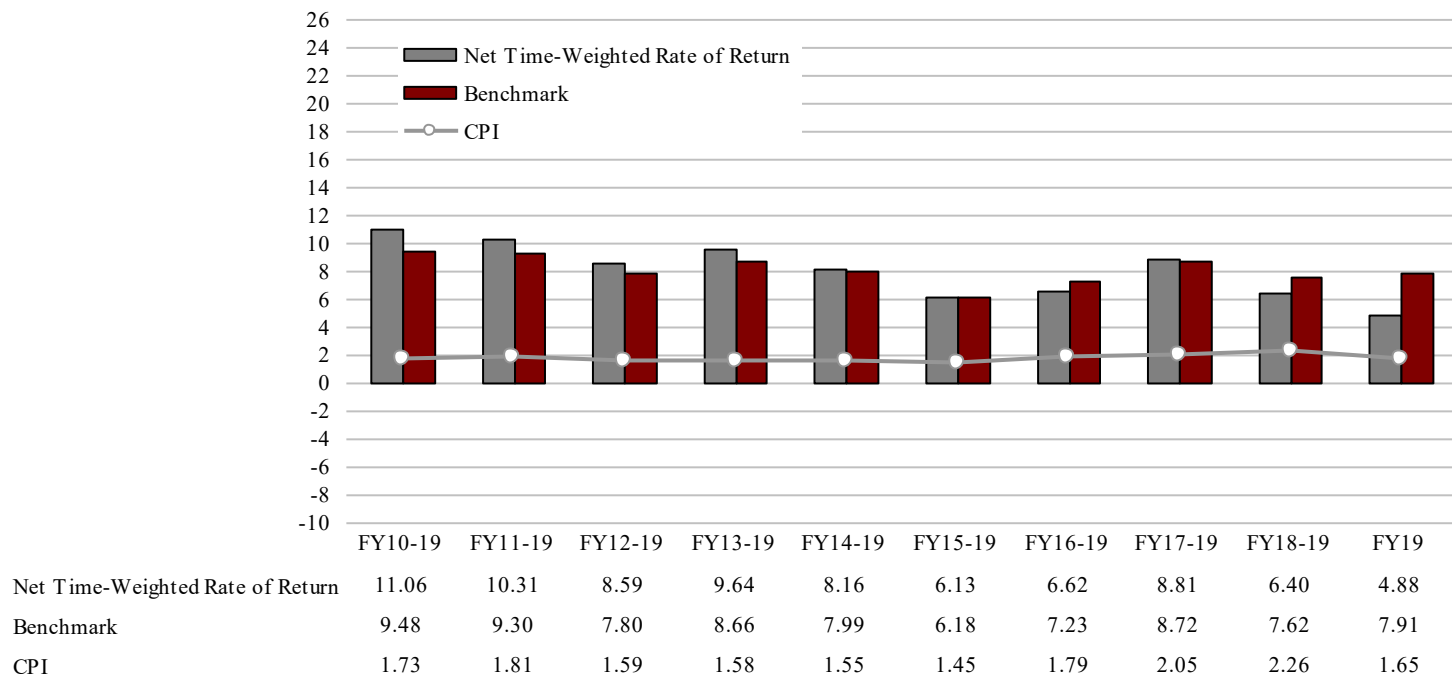
Though monthly benefit payments exceed monthly contributions, the South Dakota Retirement System is not subject to sudden, substantial, and unexpected withdrawals. As a result, it is not necessary to have a high percentage of assets in short-term investments unless this is deemed to be the best investment strategy. This allows the trust fund to be as fully invested in stocks, bonds, and other alternatives as investment strategy dictates.

INVESTMENT ANALYSIS (CONTINUED)

Investment Performance Compared to Capital Market Benchmark and Inflation



Cumulative Investment Performance Compared to Capital Market Benchmark and Inflation



Investment managers	Management expenses
State of South Dakota Investment Council	\$11,266,588
Blackstone Private Equity	3,063,733
Blackstone Real Estate Partners	5,982,270
Brandes Global Mid-Cap	582,578
Brookfield Real Estate	1,429,505
Capital International	667,845
Carlyle	359,899
Cinven	2,517,788
CVC	2,199,630
Doughty Hanson & Co. European Real Estate	(63,927)
Doughty Hanson PE	91,360
Elevation Partners	5,592
EnCap Energy	753,074
KKR Associates	11,356
Lone Star Real Estate	5,436,216
Riverstone	3,312,914
Rockpoint Real Estate	4,024,122
Sanders All Asset Value	407,021
Sanders Capital	335,528
Silver Lake Partners LP	2,702,182
Starwood Real Estate	1,914,677
TCW Opp MBS Strategy	3,977,823
Total investment activity expenses	<u>\$50,977,774</u>

**Schedule of
Investment
Management Fees
and Expenses
Year Ended
June 30, 2019**

INVESTMENT ANALYSIS (CONTINUED)

Summary of Investment Portfolios As of June 30, 2019

	Fair Value	Futures Exposure	Fair Value with Futures	Percent of Fund with Futures	Capital Markets Benchmark Percent
Global Equity					
Internal Global Equity	\$4,859,535,020				
Internal Global Emerging Markets	399,223,250				
Internal Small/Mid Equity	654,446,235				
Brandes	388,097				
Dimensional Fund Advisors	61,584,998				
Sanders Capital	58,975,103				
Equity Index Futures		\$(1,645,179,280)	\$4,388,973,423	35.2	58.0
Private Equity					
Blackstone Capital Partners	155,475,441				
Blackstone Energy Partners	74,354,945				
Capital International	43,506,885				
Carlyle	98,626,435				
Cinven	100,675,027				
CVC	38,064,496				
Cypress	26,315				
Doughty Hanson	1,812,554				
Elevation	96,628				
EnCap Energy Capital	7,370,873				
KKR	533,049				
PineBridge	3,319,317				
Riverstone	144,083,623				
Silver Lake	303,985,214		971,930,802	7.8	0.0
Aggressive Absolute Return					
Bridgewater	96,025,726				
Sanders Capital	33,673,721		129,699,447	1.0	0.0
Real Estate					
Ares Management	2,823,515				
Blackstone Real Estate Partners	704,886,328				
Brookfield Strategic Partners	21,378,452				
Cargill N.A. Real Estate Partners	19,443				
Doughty Hanson	700,170				
Lone Star	133,617,592				
Rockpoint	132,143,027				
Starwood	91,169,307		1,086,737,834	8.7	10.0
Investment Grade Fixed Income					
Internal Investment Grade	1,112,079,032				
Treasury Financial Futures		590,578,750	1,702,657,782	13.7	23.0
High Yield Debt (Corporate & Real Estate)					
Internal High Yield	488,343,492				
CarVal	7,077,318				
TCW	831,541,061		1,326,961,871	10.7	7.0
Cash & Cash Equivalents					
Internal Shift Account	1,798,425,825				
Cash from Futures		1,054,600,530	2,853,026,355	22.9	2.0
Total	\$12,459,987,514	\$0	\$12,459,987,514	100%	100%

Asset Allocation

Allocation of assets to categories may be the most impactful investment decision. The Council establishes a benchmark asset allocation which considers expected long-term returns and risk. Categories included in the benchmark are those that are significant in size and can be passively implemented. These include global equity, real estate, high yield debt, investment grade debt, and cash. The Council's capital markets benchmark is based on the benchmark asset allocation and is intended to represent what is achievable through index funds without requiring exceptional skill. The capital markets benchmark is used to compare against actual results to assess whether value has been added. The benchmark is viewed as a challenging hurdle as it is difficult for most investors to exceed index returns. The Council also establishes a minimum and maximum for each category. Niche or skill-based categories are not included in the benchmark but can have a permitted range for when it is believed that valuation of a category is depressed or if superior managers have been identified.

Use of multiple asset categories can complicate understanding of total fund risk as categories may have varying sensitivities to changing economic and market conditions. When the Council began managing assets in the early 1970's, most institutional portfolios consisted of bonds, some stocks, and cash. Investors back then could understand the level of risk by simply looking at the percentage invested in stocks. To help in understanding the risk of today's more complicated portfolios, the Council focuses on equity-like and bond-like risk. Equity-like risk is the percentage invested in stocks plus any embedded equity exposure of other categories, particularly during times of market stress. Bond-like risk is the percentage invested in investment grade bonds plus any embedded bond exposure of other categories. The benchmark equity-like risk is 70 percent with a permitted range of 50 percent to 85 percent. The benchmark bond-like risk is 27 percent with a permitted range of 15 percent to 50 percent. There are also ranges around the benchmark allocation to individual asset categories.

The valuation process which drives allocations within the ranges is based on the present value of estimated future cash flows. Internal research efforts focus on estimating cash flows and risk-based discount rates. Conventional statistical measures of risk are calculated. These include standard deviation as a measure of volatility and correlation as a measure of the degree that categories provide diversification. Conventional measures are helpful for understanding risk in normal times but understate real-world frequency and magnitude of severe declines. The Council adjusts statistical measures to better reflect risk during severe declines. Liquidity is monitored to minimize risk of forced liquidations.

On June 30, 2019, the target equity-like risk of the SDRS fund was 56.7 percent compared to the fiscal year 2019 capital markets benchmark level of 70.0 percent. The target equity-like risk began the fiscal year at 50 percent, then moved to 63.3 percent in December 2018 as valuations became more attractive and ended the fiscal year at 56.7 percent as valuations became less attractive. The actual level can fluctuate within a small rebalance band around the target.

The expected long-term return for the benchmark allocation as of June 30, 2019, was 6.3 percent. The actual portfolio can be significantly different than the benchmark at any point in time, but the long-term average level of equity-like risk is expected to be close to the 70 percent benchmark level. The expected return for the benchmark excludes any potential value added or detracted relative to index returns resulting from actively managing the fund. The estimated rate of inflation embedded in the expected return was 2.3 percent. Standard deviation was estimated to be 15.4 percent after adjustments to capture real-world

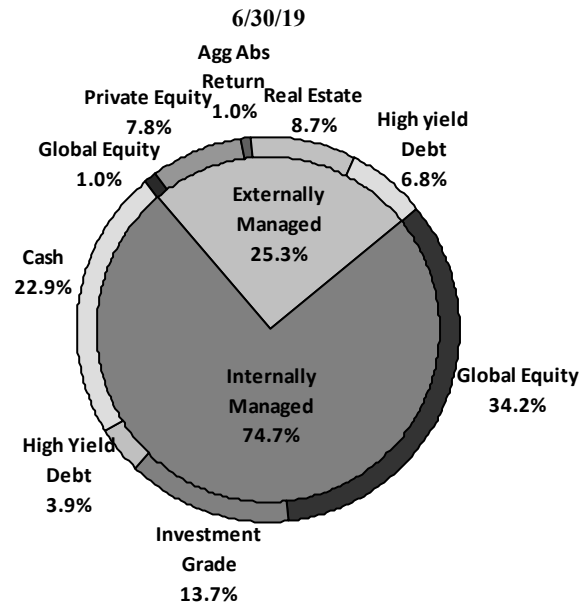
INVESTMENT ANALYSIS (CONTINUED)

frequency of adverse events. These statistics indicate a 66 percent chance the return for any year would be between (9.1 percent) and 21.7 percent and a 95 percent chance the return would be between (24.5 percent) and 37.1 percent.

The greatest risk to markets may be unsustainable buildup of global debt. The consequence is likely muted growth and heightened risk down the road of either inflation to inflate away the debt or deflationary debt liquidation. The Council is mindful of these risks as it continues to invest for the long term.

Asset Allocation

	6/30/17	6/30/18	6/30/19
Global equities	34.2%	28.0%	35.2%
Fixed income	24.3%	23.4%	24.4%
Cash	24.5%	31.5%	22.9%
Arbitrage/AAR	1.0%	1.0%	1.0%
Real estate	9.3%	8.2%	8.7%
Private equity	6.7%	7.9%	7.8%



SDRS Rates of Return

Annual Returns

Fiscal Year	Time Weighted Gross of Fees	Time Weighted Net of Fees	Capital Markets Benchmark	Money Weighted Net of Fees
2019	5.32%	4.88%	7.91%	4.84%
2018	8.35%	7.94%	7.33%	7.95%
2017	14.2%	13.8%	11.0%	13.8%
2016	0.6%	0.3%	2.9%	0.2%
2015	4.4%	4.2%	2.1%	4.2%
2014	19.3%	18.9%	17.5%	18.9%
2013	19.5%	19.0%	12.7%	19.0%
2012	1.9%	1.5%	2.0%	1.4%
2011	25.8%	25.2%	22.1%	25.3%
2010	18.7%	18.0%	11.1%	18.2%

Annualized Returns

	Time Weighted Net of Fees	Capital Markets Benchmark
FY19	4.88%	7.91%
FY18-19	6.40%	7.62%
FY17-19	8.81%	8.72%
FY16-19	6.62%	7.23%
FY15-19	6.13%	6.18%
FY14-19	8.16%	7.99%
FY13-19	9.64%	8.66%
FY12-19	8.59%	7.80%
FY11-19	10.31%	9.30%
FY10-19	11.06%	9.48%

Time-Weighted Rate of Return is the rate of investment growth earned on a unit of assets held continuously for the entire period measured and is used to compare returns against other investment managers and indexes.

Money-Weighted Rate of Return considers the changing amounts actually invested during a period and weights the amount of pension plan investment by the proportion of time they are available to earn a return during that period. The rate of return is then calculated by solving, through an iterative process, for the rate that equates (1) the sum of the weighted external cash flows into and out of pension plan investments to (2) the ending fair value of the pension plan investment.

Capital Markets Benchmark is the asset allocation policy approved by the Investment Council applied to the appropriate index returns.

FY 2019 Asset Class Returns and Benchmarks

Fiscal Year 2019	Global Equity Internal	Global Equity Composite	Investment Grade FI Internal	High Yield Internal	Opportunistic Real Estate Partnerships	Private Equity Partnerships	Total Fund
SDRS	3.10%	2.10%	8.49%	(0.37)%	9.39%	2.28%	4.88%
Benchmark	8.11%	7.03%	7.91%	6.70%	13.25%	7.61%	7.91%
Difference	(5.01)%	(4.93)%	0.58%	(7.07)%	(3.86)%	(5.33)%	(3.03)%

3 Year Ended 6/30/19	Global Equity Internal	Global Equity Composite	Investment Grade FI Internal	High Yield Internal	Opportunistic Real Estate Partnerships	Private Equity Partnerships	Total Fund
SDRS	12.51%	12.12%	2.45%	10.47%	13.38%	15.09%	8.81%
Benchmark	13.10%	12.28%	2.32%	7.22%	7.47%	14.40%	8.72%
Difference	(0.60)%	(0.15)%	0.13%	3.25%	5.91%	0.68%	0.09%

5 Year Ended 6/30/19	Global Equity Internal	Global Equity Composite	Investment Grade FI Internal	High Yield Internal	Opportunistic Real Estate Partnerships	Private Equity Partnerships	Total Fund
SDRS	7.31%	7.19%	3.16%	1.74%	12.32%	11.01%	6.13%
Benchmark	8.42%	7.42%	2.95%	2.69%	9.87%	8.64%	6.18%
Difference	(1.11)%	(0.23)%	0.21%	(0.95)%	2.45%	2.37%	(0.06)%

Asset Class Benchmarks:

Global Equity composite—MSCI All Country World Index (ACWI) weighted 2/3 plus MSCI USA Index weighted 1/3

Investment Grade Fixed Income—FTSE US Broad Investment-Grade Bond Index (USBIG)

High Yield Corporate Debt—FTSE High Yield Index

Opportunistic Real Estate Partnerships—MSCI US REIT Index multiplied by 120% less 20% of the FTSE US

Three-Month Treasury-Bill Index (2017-2019), MSCI US REIT Index (2015-2016)

Private Equity Partnerships—MSCI All Country World Index (ACWI) weighted 2/3 plus MSCI USA Index

weighted 1/3 all multiplied by 120% less 20% of the FTSE US Three-Month Treasury-Bill Index (2017-2019);

MSCI All Country World Index (ACWI) weighted 2/3 and MSCI USA Index weighted 1/3 (2015-2016)

Total Fund Benchmark

	Global Equity	Investment Grade Fixed Income	Real Estate	High Yield Debt	Cash	Private Equity	Commodities	TIPS
2019	58%	23%	10%	7%	2%			
2018	58%	23%	10%	7%	2%			
2017	58%	23%	10%	7%	2%			
2016	58%	23%	10%	7%	2%			
2015	60%	19%	10%	7%	2%		1%	1%

Global Equity—MSCI All Country World Index (ACWI) weighted 2/3 plus MSCI USA index weighted 1/3 (2015-2019)

Investment Grade Fixed Income—FTSE US Broad Investment –Grade Bond Index (USBIG) (2015-2019)

Real Estate—MSCI US REIT Index (2015-2019)

High Yield Debt—FTSE High-Yield Market Index (2015-2019)

Cash—FTSE US Three-Month Treasury-Bill Index (2015-2019)

Commodities—Standard and Poor's GSCI Index (2015)

Treasury Inflation-Protected Securities (TIPS) - FTSE US Inflation-Linked Securities Index (2015)

INVESTMENT ANALYSIS (CONTINUED)

Private Equity and Real Estate Limited Partnership Investments

The Council has invested in real estate (RE) and private equity (PE) limited partnerships since the mid-1990's. Although these investments are illiquid and have higher fees, the Council believes that they offer diversification and the opportunity for added value net-of-fees over public market investments. The funding of these investments is made over several years as the partnerships call money from investors to buy assets and later return it when assets are sold. According to industry standards, the return analysis for these investments requires the use of a since inception internal rate of return (SI-IRR).

SI-IRR is the calculation that equates the present value of all cash flows (capital calls and distributions) with the period-end value. The public market equivalent (PME) is a method where a public market index is expressed in terms of a SI-IRR, using the same cash flows and timing as those of the partnership investment over the same time period. The partnership SI-IRR is calculated net-of-fees (management fees, performance based fees, and general partner carried interest). Also, a composite SI-IRR that combines the partnerships in each category is calculated.

From November of 1995 through June of 2019, the net-of-fees SI-IRR for the composite PE limited partnership investments was 9.3 percent. This can be compared to the S&P 500 Index PME of 6.2 percent for the same period. RE limited partnerships net-of-fees SI-IRR composite from December 1994 through June 2019 was 20.7 percent. A PME using the MSCI US REIT Index could not be calculated using the same cash flows because the return of the RE limited partnerships was significantly higher than the index. The annualized time-weighted rate of return for the MSCI US REIT Index was 10.4 percent for the same period of time.

The composite return of the RE limited partnerships has significantly exceeded and the PE limited partnerships has slightly exceeded Council expectations. The Council will continue its ongoing evaluation of RE and PE limited partnerships.

See the South Dakota Investment Council Annual Report on the SDIC website, www.sdic.sd.gov, for more details on this topic.

STATISTICAL SUMMARY



Membership Profile

- Public Entities Participating in SDRS
- SDRS Benefits Paid: Class A & B
- Membership by Age: Class A & B
- Membership by County of Residence: Class A & B
- SDRS Benefits Paid: Class C
- Membership by Age: Class C
- Membership by County of Residence: Class C
- Membership by Group
- Benefit Recipients by Group
- Average Benefit Payments
- Historical Views

MEMBERSHIP PROFILE

Public Entities Participating in SDRS

All teachers, higher education personnel, and legislative, executive, and judicial employees are required to participate in SDRS. Counties, municipalities, and other public entities, however, have the option of participating, and school districts may choose whether or not to include their classified employees.

The following schedules list SDRS participating entities by group, the number of active members in each group, and each group's percentage of the 41,500 total active members as of June 30, 2019.

School Districts Membership: 18,784

Percentage of total active
members: 45.3%
Units: 164

Aberdeen	Cornbelt Coop	Harding County	Mitchell	South Central
Agar-Blunt-Onida	Corsica-Stickney	Harrisburg	Mobridge-Pollock	South East Area
Alcester-Hudson	Custer	Henry	Montrose	Spearfish
Andes Central	Dakota Valley	Herreid	Mt. Vernon	Stanley County
Arlington	Dell Rapids	Highmore-Harold	New Underwood	Summit
Armour	DeSmet	Hill City	Newell	Tea Area
Avon	Deubrook Area	Hitchcock-Tulare	North Central Coop	Three Rivers
Baltic	Deuel	Hot Springs	Northeast Tech	Timber Lake
Belle Fourche	Doland	Hoven	Northeast Ed Serv	Todd County
Bennett County	Douglas	Howard	Northwest Area	Tripp-Delmont
Beresford	Dupree	Huron	Northwestern	Tri-Valley
Big Stone City	Eagle Butte	Ipswich	Oahe Special Ed	Vermillion
Bison	East Dakota Ed	Irene-Wakonda	Oelrichs	Viborg-Hurley
Black Hills Special	Edgemont	Iroquois	Oglala Lakota	Wagner
Serv Coop	Edmunds Central	James Valley Ed	County	Wall
Bon Homme	Elk Mountain	Coop	Oldham-Ramona	Warner
Bowdle	Elk Point-Jefferson	Jones County	Parker	Watertown
Brandon Valley	Elkton	Kadoka Area	Parkston	Waubay
Bridgewater-Emery	Estelline	Kimball	Pierre	Waverly
Britton-Hecla	Ethan	Lake Preston	Plankinton	Webster Area
Brookings	Eureka	Langford Area	Platte-Geddes	Wessington Springs
Burke	Faith	Lead-Deadwood	Prairie Lakes Ed	West Central
Canistota	Faultkon	Lemmon	Coop	White Lake
Canton	Flandreau	Lennox	Rapid City	White River
Castlewood	Florence	Leola	Redfield	Willow Lake
Centerville	Frederick Area	Lyman	Rosholt	Wilmot
Chamberlain	Freeman	Madison Central	Rutland	Winner
Chester Area	Garretson	Marion	Sanborn Central	Wolsey-Wessington
Children's Hospital/ Lifescape	Gayville-Volin	McCook Central	Scotland	Woonsocket
Clark	Gettysburg	McIntosh	Selby Area	Yankton
Colman-Egan	Gregory	McLaughlin	Sioux Falls	
Colome	Groton Area	Meade County	Sioux Valley	
Core Education	Haakon County	Menno	Sisseton	
Coop	Hamlin	Milbank	Smee	
	Hanson	Miller	South Central Coop	

Legislative, Executive, and Judicial Agencies Membership: 8,056

Percentage of total active
members: 19.4%
Units: 1

Executive Management	Lottery	Attorney General
Agriculture	Military	State Auditor
Corrections	Public Safety	State Treasurer
Education	Revenue	School & Public Lands
Environment & Natural Resources	Social Services	Public Utilities Commission
Game, Fish & Parks	Tourism	Legislative Audit
Governor's Office of Economic Dev	Transportation	Legislative Research Council
Health	Tribal Relations	Unified Judicial System
Human Services	Veterans Affairs	SD Investment Council
Labor & Regulation	Secretary of State	SD Retirement System

Institutions of Higher Education Membership: 4,751

Percentage of total active
members: 11.4%
Units: 1

Board of Regents Central Office	Black Hills State University
University of South Dakota	Dakota State University
South Dakota State University	South Dakota School for the Visually Impaired
South Dakota School of Mines and Technology	South Dakota School for the Deaf
Northern State University	

Aberdeen	Chamberlain	Flandreau	Keystone	North Sioux City	Tabor
Alcester	Chancellor	Ft. Pierre	Kimball	Oacoma	Tea
Alexandria	Clark	Freeman	Lake Andes	Onida	Timber Lake
Arlington	Clear Lake	Garretson	Lake Norden	Parker	Tripp
Armour	Colman	Gary	Lake Preston	Parkston	Tyndall
Aurora	Colome	Gettysburg	Langford	Philip	Valley Springs
Avon	Colton	Gregory	Lead	Pickstown	Veblen
Baltic	Conde	Groton	Lemmon	Pierre	Vermillion
Belle Fourche	Corsica	Harrisburg	Lennox	Plankinton	Viborg
Beresford	Crooks	Hartford	Leola	Platte	Volga
Big Stone City	Custer	Hayti	Madison	Pollock	Wagner
Bison	Dallas	Hecla	Marion	Presho	Wakonda
Bonesteel	Deadwood	Hermosa	Martin	Pukwana	Wall
Bowdle	Dell Rapids	Herreid	McIntosh	Rapid City	Warner
Box Elder	Delmont	Highmore	McLaughlin	Redfield	Watertown
Brandon	DeSmet	Hill City	Menno	Reliance	Waubay
Bridgewater	Doland	Hot Springs	Midland	Roscoe	Webster
Britton	Dupree	Hoven	Milbank	Rosholt	Wessington
Brookings	Eagle Butte	Howard	Miller	Salem	Springs
Bruce	Edgemont	Hudson	Mission	Scotland	White
Bryant	Elk Point	Humboldt	Mitchell	Selby	White Lake
Buffalo	Elkton	Hurley	Mobridge	Sioux Falls	White River
Burke	Emery	Huron	Montrose	Sisseton	Whitewood
Canistota	Estelline	Ipswich	Mt. Vernon	Spearfish	Wilmot
Canton	Ethan	Irene	Murdo	Springfield	Winner
Carthage	Eureka	Jefferson	New Effington	Stickney	Woonsocket
Castlewood	Faith	Kadoka	New Underwood	Sturgis	Worthing
Centerville	Faulkton	Kennebec	Newell	Summerset	Yankton

Municipalities

Membership: 4,919

Percentage of total active members: 11.9%
Units: 167

Aurora	Codington	Grant	Jones	Minnehaha	Tripp
Beadle	Corson	Gregory	Kingsbury	Moody	Todd
Bennett	Custer	Haakon	Lake	Pennington	Turner
Bon Homme	Davison	Hamlin	Lawrence	Perkins	Union
Brookings	Day	Hand	Lincoln	Potter	Walworth
Brown	Deuel	Hanson	Lyman	Roberts	Yankton
Brule	Dewey	Harding	Marshall	Sanborn	Ziebach
Butte	Douglas	Hughes	McCook	Spink	
Campbell	Edmunds	Hutchinson	McPherson	Springdale	
Charles Mix	Fall River-	Hyde	Meade	Township	
Clark	Oglala Lakota	Jackson	Mellette	Stanley	
Clay	Faulk	Jerauld	Miner	Sully	

Counties

Membership: 4,126

Percentage of total active members: 9.9%
Units: 65

Aberdeen Housing Auth	Grant County Cons	Mina Lake Sani & Water Dist
Assoc School Boards of SD	Gregory County Cons	Miner County Cons Dist
B-Y Water Dist	Haakon County Cons Dist	Minnehaha County Cons Dist
Battle Creek Fire Protection Dist	Hamlin County Cons	Mitchell Housing & Redev
Beadle County Cons Dist	Hand County Cons Dist	N.E. Council of Govt
Belle Fourche Irrigation	Harding County Cons Dist	Pennington County Housing Dev
Black Hawk Water Users Dist	Heartland Consumer Power Dist	Perkins County Cons Dist
Black Hills Council of Local Govt	Hill City Ambulance Dist	Piedmont Fire Protection Dist
Brookings County Cons Dist	Hill City Fire Protection Dist	Pierre Housing & Redev
Brown-Marshall Cons Dist	Hot Springs Housing & Redev	Planning & Dev Dist III
Brule-Buffalo Cons Dist	Hughes County Cons	Potter County Cons Dist
Burke Housing & Redev	Hutchinson County Cons	Randall Community Water
Butte County Cons Dist	Hyde County Cons Dist	Rapid Valley Sanitary Dist
Butte-Meade Water Dist	James River Water Dev Dist	Redfield Housing
Campbell County Cons Dist	Jerauld Cty Cons Dist	Roberts Cons Board
Canton Housing and Redev Com	Keystone Fire Protection	School Admin. Of SD
Cement Plant	Kingsbury Cons Dist	Sioux Falls Airport Authority
Central Plains Water	Lake Madison Sanitary Dist	Sisseton Housing & Redev
Central SD Enhancement Dist	Lake Poinsett Sanitary Dist	South Brown County Cons Dist
Charles Mix Cons Dist	Lead-Deadwood Sanitary Dist	SD Assoc of County Commissioners
Clark County Cons	Lemmon Housing Authority	SD High School Activities Assoc
Codington County Cons	Lennox Housing & Redev	SD Housing Dev Authority
Dakota Dunes Improvement Dist	Lincoln County Cons	SD Municipal League
Dakota Valley Fire	Madison Housing & Redev	SD Pharmacists Assoc.
Davison Cons Dist	Marshall County Cons	SD Science & Technology Auth
Day County Cons	Marshall County Hospital	Southeastern Council of Gov.
Deuel County Cons	McCook Lake Sanitary Dist	Southern Missouri Recycle & Waste
East Dakota Water Dev	McPherson County Cons Dist	Spink County Cons Dist
Edmunds County Cons Dist	Meade County Housing & Redev	State Bar of SD
Fall River Water Users Dist	Mellette County Cons Dist	Tri-County Conservation
Faulk Cons Dist	Metro Communications	Walworth County Cons
Faulkton Area Med Center	Milbank Housing & Redev	War Hawk Emergency Mgmt Dist
First District Assoc of Local Gov	Miller Housing & Redev	Watertown Housing Auth

Other Public Entities

Membership: 864

Percentage of total active members: 2.1%
Units: 99

MEMBERSHIP PROFILE (CONTINUED)

SDRS Benefits Paid*

SDRS Benefits Paid by County of Residence

Class A, Class B Public Safety and Judicial

County	FY 2019 members receiving benefits	Annualized benefits	County	FY 2019 members receiving benefits	Annualized benefits
Aurora	134	2,110,938	Jackson	51	853,557
Beadle	515	9,582,614	Jerauld	74	1,128,259
Bennett	47	775,778	Jones	38	806,517
Bon Homme	330	5,014,786	Kingsbury	202	3,392,361
Brookings	1,521	38,572,877	Lake	422	8,815,473
Brown	1,212	25,012,956	Lawrence	947	20,093,445
Brule	150	2,946,462	Lincoln	404	7,020,607
Buffalo	3	50,702	Lyman	96	1,668,039
Butte	338	5,261,358	Marshall	180	3,027,519
Campbell	62	940,587	McCook	152	2,730,003
Charles Mix	233	4,221,392	McPherson	73	1,017,622
Clark	134	1,937,485	Meade	672	12,581,582
Clay	661	16,935,748	Mellette	59	671,545
Codington	800	17,949,671	Miner	69	1,283,278
Corson	43	679,853	Minnehaha	3,828	90,175,078
Custer	375	6,665,191	Moody	196	3,094,265
Davison	531	11,350,175	Oglala		
Day	214	3,502,904	Lakota	16	290,303
Deuel	123	1,944,458	Pennington	3,279	72,896,028
Dewey	93	1,556,014	Perkins	92	1,441,782
Douglas	91	1,541,135	Potter	110	1,809,846
Edmunds	114	1,933,180	Roberts	284	4,635,331
Fall River	320	4,480,550	Sanborn	85	1,418,143
Faulk	117	1,687,150	Spink	441	6,972,321
Grant	196	3,385,751	Stanley	222	5,368,321
Gregory	164	2,546,374	Sully	60	830,682
Haakon	62	889,606	Todd	63	1,116,661
Hamlin	190	3,089,657	Tripp	203	3,291,110
Hand	94	1,465,578	Turner	242	3,610,729
Hanson	57	970,668	Union	337	6,197,059
Harding	34	428,123	Walworth	235	4,169,906
Hughes	1,441	37,156,504	Yankton	885	17,326,648
Hutchinson	259	4,514,431	Ziebach	22	384,590
Hyde	65	842,185			
Total benefits payable by county				24,762	\$512,061,451

SDRS Benefits Paid Outside of South Dakota

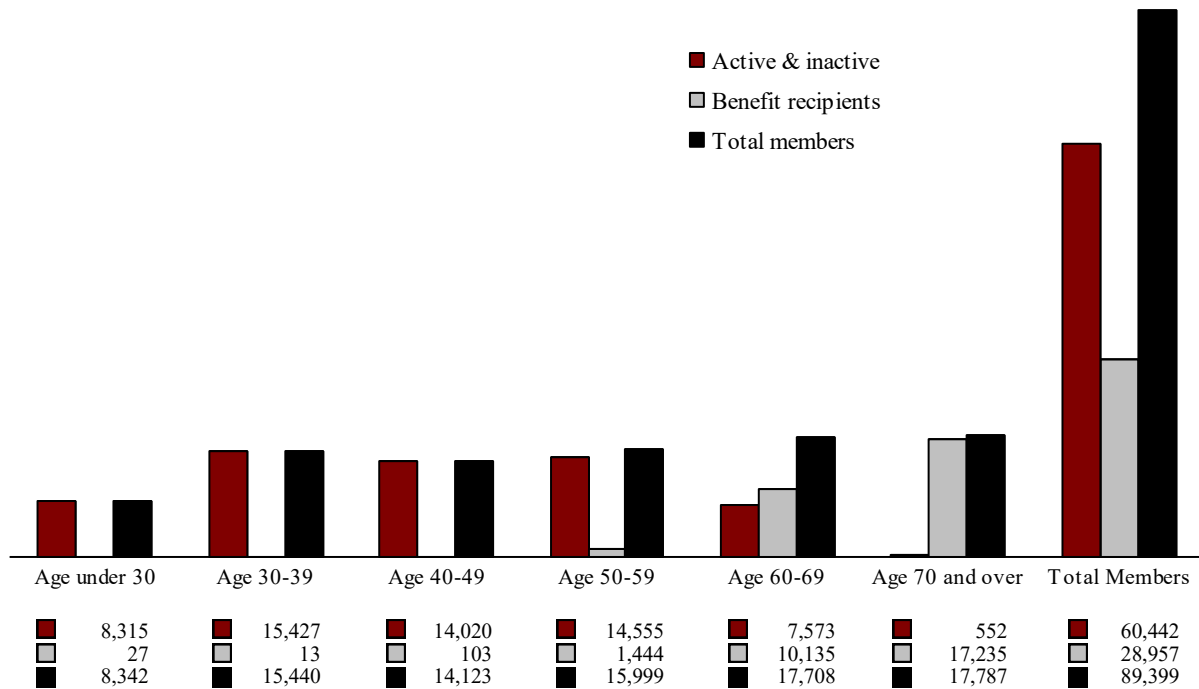
Class A, Class B Public Safety and Judicial

State	Members receiving benefits	Annualized benefits	State	Members receiving benefits	Annualized benefits
Arizona	395	8,198,697	North Dakota	214	3,360,639
California	104	1,806,855	Texas	202	3,609,920
Colorado	231	3,881,709	Wisconsin	131	2,185,108
Florida	188	4,190,509	Wyoming	139	1,928,221
Iowa	284	4,764,465			
Minnesota	637	10,060,019	Other states and foreign countries	1,195	19,722,973
Montana	105	1,879,509			
Nebraska	370	5,642,450			
Total benefits payable outside South Dakota				4,195	\$71,231,074
Total benefit recipients and benefits payable				28,957	\$583,292,525

* Note: Not all tables include Class C membership

Membership by Age*

Class A, Class B Public
Safety and Judicial



County	Total members	County	Total members	County	Total members
Aurora	326	Faulk	354	Mellette	226
Beadle	1,463	Grant	523	Miner	224
Bennett	230	Gregory	447	Minnehaha	13,376
Bon Homme	874	Haakon	192	Moody	501
Brookings	4,892	Hamlin	606	Oglala	
Brown	3,628	Hand	246	Lakota	129
Brule	484	Hanson	246	Pennington	9,380
Buffalo	7	Harding	125	Perkins	261
Butte	993	Hughes	4,812	Potter	289
Campbell	152	Hutchinson	679	Roberts	770
Charles Mix	760	Hyde	155	Sanborn	233
Clark	345	Jackson	185	Spink	1,238
Clay	2,207	Jerauld	200	Stanley	663
Codington	2,467	Jones	125	Sully	184
Corson	189	Kingsbury	634	Todd	488
Custer	881	Lake	1,358	Tripp	622
Davison	1,440	Lawrence	2,685	Turner	727
Day	553	Lincoln	1,921	Union	1,088
Deuel	404	Lyman	295	Walworth	687
Dewey	450	Marshall	486	Yankton	2,583
Douglas	255	McCook	491	Ziebach	125
Edmunds	378	McPherson	216		
Fall River	911	Meade	2,205	Out of state/ Other	12,130

Membership by County of Residence*

Active, Inactive, and
Retired Members

Class A, Class B Public
Safety and Judicial

Total membership 89,399

* Note: Not all tables include Class C membership

MEMBERSHIP PROFILE (CONTINUED)

SDRS Benefits Paid					
SDRS Benefits Paid by County of Residence	County	FY 2019 members receiving benefits	Annualized benefits	County	FY 2019 members receiving benefits
					Annualized benefits
Class C Cement Plant	Brookings	1	10,049	Lawrence	6
	Brown	1	5,143	Meade	32
	Butte	1	31,296	Minnehaha	5
	Custer	4	58,978	Pennington	150
	Davison	1	28,377	Walworth	1
	Fall River	1	12,352		
Total benefits payable by county					203
					\$4,136,998

SDRS Benefits Paid Outside of South Dakota					
Class C Cement Plant	State	Members receiving benefits	Annualized benefits	State	Members receiving benefits
					Annualized benefits
Class C Cement Plant	Arizona	3	55,538	Oklahoma	1
	Colorado	4	39,422	Oregon	1
	Florida	1	19,267	S. Carolina	1
	Idaho	2	21,936	Wyoming	3
	Kansas	1	10,457		
	North Dakota	2	34,003	Other states	17
Total benefits payable outside South Dakota					36
Total benefit recipients and benefits payable					\$374,234
					239
					\$4,511,232

Membership by County of Residence						
Active, Inactive, and Retired Members	County	Total members	County	Total members	County	Total members
	Bennett	1	Davison	1	Meade	36
	Brookings	1	Dewey	1	Minnehaha	7
	Brown	1	Fall River	1	Pennington	163
	Butte	1	Kingsbury	1	Walworth	1
	Charles Mix	1	Lawrence	7		
	Custer	4	Lincoln	2	Out of State	57
Total membership					286	



Membership by Group

	Active members			Inactive members			
	Vested	Non-vested	Total active	Vested	Non-vested	Total inactive	Total members
Board of Regents							
Female	1,267	359	1,626	627	285	912	2,538
Male	1,195	387	1,582	626	319	945	2,527
Total	2,462	746	3,208	1,253	604	1,857	5,065
County General							
Female	1,281	416	1,697	395	306	701	2,398
Male	1,076	365	1,441	271	285	556	1,997
Total	2,357	781	3,138	666	591	1,257	4,395
County Public Safety							
Female	127	91	218	25	51	76	294
Male	525	245	770	89	149	238	1,008
Total	652	336	988	114	200	314	1,302
Judicial							
Female	22	5	27	1	0	1	28
Male	31	4	35	2	0	2	37
Total	53	9	62	3	0	3	65
Municipal General							
Female	1,201	478	1,679	381	562	943	2,622
Male	1,606	551	2,157	337	360	697	2,854
Total	2,807	1,029	3,836	718	922	1,640	5,476
Municipal Public Safety							
Female	58	35	93	11	11	22	115
Male	735	255	990	114	114	228	1,218
Total	793	290	1,083	125	125	250	1,333
Public School & Board of Regents Classified							
Female	4,883	1,973	6,856	1,996	2,616	4,612	11,468
Male	1,804	811	2,615	518	999	1,517	4,132
Total	6,687	2,784	9,471	2,514	3,615	6,129	15,600
State General							
Female	3,109	926	4,035	977	1,065	2,042	6,077
Male	2,270	615	2,885	660	547	1,207	4,092
Total	5,379	1,541	6,920	1,637	1,612	3,249	10,169
State Public Safety and Penitentiary							
Female	186	74	260	34	91	125	385
Male	628	186	814	101	216	317	1,131
Total	814	260	1,074	135	307	442	1,516
Teachers							
Female	7,732	1,045	8,777	2,176	672	2,848	11,625
Male	2,567	363	2,930	744	222	966	3,896
Total	10,299	1,408	11,707	2,920	894	3,814	15,521
Cement Plant							
Female	0	0	0	5	0	5	5
Male	13	0	13	29	0	29	42
Total	13	0	13	34	0	34	47
Grand Total							
Female	19,866	5,402	25,268	6,628	5,659	12,287	37,555
Male	12,450	3,782	16,232	3,491	3,211	6,702	22,934
Total	32,316	9,184	41,500	10,119	8,870	18,989	60,489

MEMBERSHIP PROFILE (CONTINUED)

Benefit Recipients by Group

	Retirement benefits		Disability benefits		Survivor benefits		Total benefits	
	2019	2018	2019	2018	2019	2018	2019	2018
Board of Regents								
Male	1,151	1,136	2	2	36	33	1,189	1,171
Female	681	645	4	7	285	283	970	935
Total	1,832	1,781	6	9	321	316	2,159	2,106
County General								
Male	852	830	12	15	66	64	930	909
Female	1,007	967	12	11	293	289	1,312	1,267
Total	1,859	1,797	24	26	359	353	2,242	2,176
County Public Safety								
Male	298	269	6	6	9	5	313	280
Female	50	47	0	1	35	32	85	80
Total	348	316	6	7	44	37	398	360
Judicial								
Male	60	59	0	0	0	0	60	59
Female	9	9	0	0	23	19	32	28
Total	69	68	0	0	23	19	92	87
Municipal General								
Male	980	917	18	18	39	34	1,037	969
Female	763	703	15	16	284	278	1,062	997
Total	1,743	1,620	33	34	323	312	2,099	1,966
Municipal Public Safety								
Male	521	505	12	12	1	0	534	517
Female	12	11	2	2	105	100	119	113
Total	533	516	14	14	106	100	653	630
Public School & Board of Regents Classified								
Male	1,301	1,242	31	34	217	209	1,549	1,485
Female	3,839	3,664	40	42	349	350	4,228	4,056
Total	5,140	4,906	71	76	566	559	5,777	5,541
State General								
Male	2,152	2,078	23	24	163	156	2,338	2,258
Female	2,242	2,175	50	50	621	656	2,913	2,881
Total	4,394	4,253	73	74	784	812	5,251	5,139
State Public Safety and Penitentiary								
Male	518	490	4	5	8	4	530	499
Female	77	70	1	1	80	66	158	137
Total	595	560	5	6	88	70	688	636
Teachers								
Male	2,594	2,562	6	8	337	321	2,937	2,891
Female	5,961	5,752	20	21	553	536	6,534	6,309
Total	8,555	8,314	26	29	890	857	9,471	9,200
Cement Plant								
Male	178	181	6	6	1	1	185	188
Female	20	20	0	0	34	32	54	52
Total	198	201	6	6	35	33	239	240
Grand Total								
Male	10,605	10,269	120	130	877	827	11,602	11,226
Female	14,661	14,063	144	151	2,662	2,641	17,467	16,855
Total	25,266	24,332	264	281	3,539	3,468	29,069 ¹	28,081 ²

¹ In addition, there are 127 members or beneficiaries as of July 1, 2019, whose benefits are currently suspended but who are entitled to future benefits.

² In addition, there are 113 members or beneficiaries as of July 1, 2018, whose benefits are currently suspended but who are entitled to future benefits.



**Average Benefits
Payments***
Last 10 Fiscal Years

Retirement effective dates	Years of credited service							Average
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
Period 7/1/2009—6/30/2010								
Average monthly benefit	563	558	682	1,010	1,476	1,994	2,683	1,447
Average final average salary	31,782	31,647	33,854	39,245	44,464	46,812	50,377	41,082
Number of retired members	83	227	141	150	170	183	278	1,232
Period 7/1/2010—6/30/2011								
Average monthly benefit	460	761	726	1,051	1,490	1,960	2,278	1,634
Average final average salary	34,708	39,038	37,032	41,887	44,039	46,463	52,846	44,667
Number of retired members	63	155	159	152	194	188	357	1,268
Period 7/1/2011—6/30/2012								
Average monthly benefit	531	521	663	1,092	1,456	1,797	2,805	1,472
Average final average salary	34,604	35,033	35,652	40,892	43,466	44,076	53,602	42,723
Number of retired members	101	241	211	163	213	207	370	1,506
Period 7/1/2012—6/30/2013								
Average monthly benefit	570	531	791	1,014	1,510	1,929	2,592	1,447
Average final average salary	37,141	36,802	40,340	40,122	44,113	47,834	50,276	43,489
Number of retired members	89	237	199	172	204	229	329	1,459
Period 7/1/2013—6/30/2014								
Average monthly benefit	618	565	723	1,021	1,407	1,948	2,746	1,409
Average final average salary	34,927	38,589	38,756	43,057	43,358	46,517	52,059	43,495
Number of retired members	75	229	195	152	159	174	263	1,247
Period 7/1/2014—6/30/2015								
Average monthly benefit	389	533	831	1,138	1,517	1,942	2,807	1,493
Average final average salary	41,146	39,288	41,706	41,238	44,422	48,450	53,088	45,140
Number of retired members	79	240	215	168	188	218	318	1,426
Period 7/1/2015—6/30/2016								
Average monthly benefit	323	392	772	1,025	1,489	2,198	2,802	1,441
Average final average salary	45,322	33,944	41,635	41,269	45,914	53,496	54,154	44,818
Number of retired members	80	211	209	173	167	178	279	1,297
Period 7/1/2016—6/30/2017								
Average monthly benefit	345	547	813	1,146	1,555	2,173	2,980	1,595
Average final average salary	37,727	42,105	46,370	45,787	47,832	53,824	58,227	49,249
Number of retired members	88	209	215	206	146	221	338	1,423
Period 7/1/2017—6/30/2018								
Average monthly benefit	362	521	810	1,185	1,592	2,318	3,083	1,620
Average final average salary	37,558	41,416	43,287	47,260	50,336	57,132	60,047	49,789
Number of retired members	93	208	239	181	167	180	339	1,407
Period 7/1/2018—6/30/2019								
Average monthly benefit	250	425	678	1,020	1,621	2,103	3,078	1,636
Average final average salary	46,523	44,326	42,151	47,136	51,984	53,639	63,383	51,910
Number of retired members	98	221	258	209	216	260	458	1,720

* Note: Not all tables include Class C membership

MEMBERSHIP PROFILE (CONTINUED)

Historical Views

Benefit Recipients and Benefits Paid

Group	2014	2015	2016	2017	2018	2019
Board of Regents	1,792	1,879	1,962	2,038	2,106	2,159
County general	1,890	1,985	2,061	2,120	2,176	2,242
County public safety	283	308	325	347	360	398
Judicial	67	73	75	80	87	92
Municipal general	1,645	1,709	1,792	1,865	1,966	2,099
Municipal public safety	566	583	602	618	630	653
Public school & Board of Regents classified	4,548	4,808	5,074	5,312	5,541	5,777
State general	4,654	4,771	4,905	4,995	5,139	5,251
State public safety & penitentiary	528	545	571	603	636	688
Teachers	8,344	8,583	8,811	8,997	9,200	9,471
Cement Plant	245	245	242	243	240	239
Total benefit recipients	24,562	25,489	26,420	27,218	28,081	29,069
Suspended members or beneficiaries ¹		167	134	123	113	127
Total benefits paid during period	\$425,823,928	\$456,297,424	\$487,053,001	\$517,012,353	\$542,300,333	\$572,351,398
Average benefits paid during period	\$17,337	\$17,902	\$18,435	\$18,995	\$19,312	\$19,689

Active and Inactive Members

Group	2014	2015	2016	2017	2018	2019
Board of Regents	4,378	4,480	4,640	4,796	4,966	5,065
County general	4,019	4,093	4,213	4,245	4,317	4,395
County public safety	1,060	1,081	1,137	1,202	1,278	1,302
Judicial	63	60	65	64	63	65
Municipal general	4,549	4,760	5,045	5,231	5,380	5,476
Municipal public safety	1,032	1,104	1,152	1,208	1,281	1,333
Public school & Board of Regents classified	13,802	14,095	14,656	15,126	15,418	15,600
State general	9,678	9,799	9,848	10,080	10,154	10,169
State public safety & penitentiary	1,338	1,378	1,397	1,436	1,470	1,516
Teachers	14,754	15,061	15,280	15,467	15,534	15,521
Cement Plant	91	66	61	55	51	47
Total active and inactive members	54,764²	55,977	57,494	58,910	59,912	60,489

¹ This line represents the additional number of members or beneficiaries as of July 1 of the given year whose benefits are currently suspended but who are entitled to future benefits.

² In addition, there are 179 members or beneficiaries as of July 1, 2014, whose benefits are currently suspended but who are entitled to future benefits.

Benefit and Expenses by Type

	Benefits					Refunds			Total benefits & refunds	Admin. expenses
	Retirement benefits	Disability benefits	Survivor benefits	Supp. Pension benefits	Cement Plant benefits	Member refund benefits	Survivor refund benefits	Cement Plant roll-overs		
FY 2008	246,422,506	4,133,578	22,680,683	—	—	28,203,655	—	—	301,440,421	3,352,380
FY 2009	277,258,613	4,116,984	25,393,440	—	—	24,225,249	—	—	330,994,286	3,428,853
FY 2010	294,880,495	4,182,082	26,888,634	—	—	29,148,085	—	—	355,099,296	3,402,075
FY 2011	313,157,736	4,383,174	28,401,961	—	—	25,824,829	—	—	371,767,700	3,575,854
FY 2012	337,290,588	4,084,918	30,041,642	—	—	25,942,146	—	—	397,359,294	3,277,973
FY 2013	360,995,817	4,351,009	32,273,289	—	—	22,407,180	2,753,814	—	422,781,109	3,588,717
FY 2014	383,566,692	4,292,862	33,967,464	28,112	3,968,798	22,085,301	2,581,484	—	450,490,713	3,857,226
FY 2015	411,451,742	4,216,593	36,453,062	44,134	4,131,893	23,267,133	2,396,543	533,771	482,494,871	3,911,222
FY 2016	439,632,445	4,005,759	39,173,616	46,721	4,194,460	21,337,048	2,008,200	98,233	510,496,482	3,944,641
FY 2017	467,266,537	3,745,753	41,692,383	48,169	4,259,511	21,396,651	2,681,028	0	541,090,032	4,363,512
FY 2018	491,133,657	3,418,152	43,302,968	49,257	4,396,299	18,891,493	2,598,633	350,688	564,141,147	4,870,334
FY 2019	519,238,290	3,125,654	45,518,294	50,284	4,418,876	19,574,764	4,475,155	23,406	596,424,723	5,095,897

Changes in Net Position* Last 10 Fiscal Years

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Additions										
Member contributions	98,347,135	100,179,938	100,484,113	101,678,721	106,175,381	110,152,580	114,443,295	122,144,961	124,262,387	127,454,956
Employer contributions	96,914,192	98,624,738	98,866,649	100,376,481	112,551,482	109,549,977	114,090,075	121,907,646	124,734,270	127,572,348
Investment income (loss) (net of expenses)	1,011,107,887	1,616,173,385	107,541,250	1,466,616,435	1,703,240,824	435,682,659	22,836,265	1,431,977,414	911,695,475	583,573,718
Total additions (deductions) to plan net position	1,206,369,214	1,814,978,061	306,892,012	1,669,552,293	1,921,967,687	655,385,216	251,369,635	1,676,030,021	1,160,692,132	838,601,022
Deductions										
Benefit payments	325,951,211	345,942,871	371,417,148	397,620,115	425,823,928	456,297,424	487,053,001	517,012,353	542,300,333	572,351,398
Refunds	29,148,085	25,824,829	25,942,146	25,160,994	24,666,785	26,197,447	23,443,481	24,077,679	21,840,814	24,073,325
Administrative expenses	3,402,075	3,575,854	3,277,973	3,588,717	3,857,226	3,911,222	3,944,641	4,363,512	4,870,334	5,095,897
Total deductions from plan net position	358,501,371	375,343,554	400,637,267	426,369,826	454,347,939	486,406,093	514,441,123	545,453,544	569,011,481	601,520,620
Change in net position	847,867,843	1,439,634,507	(93,745,255)	1,243,182,467	1,467,619,748	168,979,123	(263,071,488)	1,130,576,477	591,680,651	237,080,402

* Note: Not all tables include Class C membership

MEMBERSHIP PROFILE (CONTINUED)

Principal Participating Employers	2019			
	Participating government	Covered employees	Rank	Percentage of total system
	State of South Dakota	8,056	1	19%
	Board of Regents	4,751	2	11%
	Sioux Falls Schools	3,224	3	8%
	Rapid City Schools	1,795	4	4%
	City of Rapid City	799	5	2%
	Watertown Schools	693	6	2%
	Pennington County	690	7	2%
	City of Brookings and Hospital	661	8	2%
	Harrisburg Schools	643	9	2%
	Aberdeen Schools	562	10	1%
	All Other	19,626		47%
	Total (497 governments)	<u>41,500</u>		<u>100%</u>

2009				
	Participating government	Covered employees	Rank	Percentage of total system
	State of South Dakota	8,164	1	21%
	Board of Regents	4,376	2	11%
	Sioux Falls Schools	2,793	3	7%
	Rapid City Schools	1,882	4	5%
	City of Rapid City	723	5	2%
	Watertown Schools	644	6	2%
	City of Brookings and Hospital	595	7	2%
	Pennington County	592	8	2%
	Minnehaha County	507	9	1%
	Aberdeen Schools	502	10	1%
	All Other	17,818		46%
	Total (468 governments)	<u>38,596</u>		<u>100%</u>

Retired Members By Type and Amount of Benefit*

As of June 30, 2019

Class A, Class B Public
Safety and Judicial

Amount of monthly benefit	Normal	Early Unreduced	Early Reduced	Disability	Survivor of Active Member	Spouse Option	Survivor of Retired Member	Level Income Unreduced	Level Income Reduced
\$1—\$250	722	144	1,244	7	33	0	394	1	49
\$251—\$500	864	195	1,688	30	107	0	517	3	105
\$501—\$750	730	237	1,393	77	88	0	380	10	98
\$751—\$1,000	582	233	1,081	52	81	3	322	19	97
\$1,001—\$1,250	489	381	724	35	59	11	293	50	80
\$1,251—\$1,500	397	503	536	23	49	9	236	93	61
\$1,501—\$1,750	334	594	377	7	42	8	192	160	71
\$1,751—\$2,000	278	691	269	7	26	7	151	213	68
Over \$2,000	1,333	5,932	558	20	81	16	399	1,253	128
	<u>5,729</u>	<u>8,910</u>	<u>7,870</u>	<u>258</u>	<u>566</u>	<u>54</u>	<u>2,884</u>	<u>1,802</u>	<u>757</u>

* Note: Not all tables include Class C membership

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A comprehensive brochure explaining the system's provisions is available online or upon request.

